ORDNANCE FIELD SERVICE

BASE SHOP DATA

GUN, MACHINE, CAL. .30

BROWNING, M1917A1

PREPARED UNDER THE DIRECTION OF THE
CHIEF OF ORDNANCE

ROCK ISLAND ARSENAL - FEB., 1943

B.S.D. No.

Overhaul

GUN, MACHINE, CAL. .30

BROWNING, M1917A1

LIST OF CONTENTS

Item	B.S.D. No.
Dismantling	1
Overhaul	2
Assembly	3
Function Firing	4

GUN, MACHINE, CAL. .30

BROWNING, M1917A1

LIST OF REFERENCES

STANDARD NOMENCLATURE LISTS

List of Drawings	51-10
Major Items of Group A	SNL A-1
Gun Machine, Cal..30, Browning, M1917, M1917A1, and Mounts, Parts and Equipment	SNL A-5
Tools, Maintenance, for repair of Automatic guns, Automatic gun Antiaircraft material, Automatic and Semiautomatic cannon, and Mortars - individual items and parts	SNL A-35
Small arms, automatic gun, trench Mortar and field artillery sighting equipment and fire control instruments, Major Items	SNL F-1
Sights, Bore (small arms & Field Artillery) - Parts	SNL F-10
Targets, testing (small arms & Field Artillery)	SNL F-12
Glass, Field, Type EE, 6 power parts & equip.	SNL F-34
Firing tables and trajectory charts	SNL F-69
Trucks, Small Arms, repair, M1	SNL G-72
Cleaning, preserving and lubricating Materials, special oils, and similar items of issue	SNL K-1
Soldering, brazing and welding material, gases and related items	SNL K-2
Targets and target equipment, small arms	SNL L-1
Measuring, impression, testing and reconditioning outfits	SNL N-9
Ammunition, rifle and automatic gun	SNL T-1
Miscellaneous service components of Small Arms ammunition and instruction material for Field Service Account	SNL T-4
Index to Current SNL	OPSI

FIELD MANUALS

Ordnance Field Manual	FM 9-5
Ordnance Field Maintenance	FM 9-10
List of Publications for Training	FM 21-6
Defense against Chemical Attack	FM 21-40
Browning Machine Gun, Cal..30, M1917	FM 23-55

TECHNICAL MANUALS

Cleaning, Preserving, Lubricating & Welding Materials & Similar Items (Now published as TR1395-A)	TM 9-850
Browning Mach. Gun Cal..30. All types, U.S. Mach. Gun, Cal..22 & Trainer, Cal..22	TM 9-1205
Field Glass, Type EE	TM 9-1611

ORDNANCE FIELD SERVICE BULLETINS

Maintenance of materiel in hands of troops	OFSB 4-1
Electric & Oxyacetylene Welding	OFSB 5-2

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Dismantling

SMALL ARMS GUN, MACHINE CAL. 30 BROWNING M1917A1	DISMANTLING	SHEET 1 OF 4

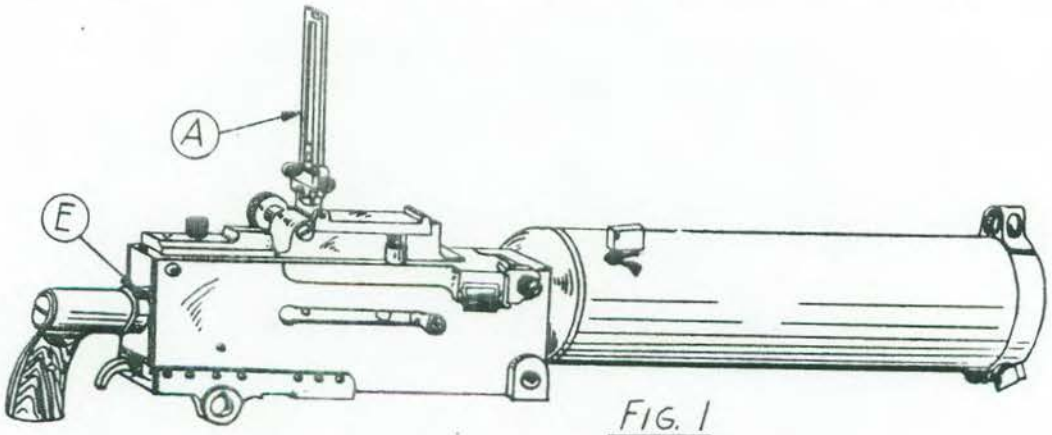

FIG. 1

REMOVE BACK PLATE ASSEMBLY

(1) RAISE REAR SIGHT (A), FIG. 1, TO POSITION SHOWN. PULL BACK ON LATCH KNOB (B), FIG. 2, AND RAISE COVER (C). PULL BACK ON BOLT HANDLE (D) AND WITH A SCREWDRIVER, PUSH IN ON DRIVING SPRING ROD (E), FIG. 1, AND TURN TO THE RIGHT A QUARTER TURN. PUSH (D) BACK TO POSITION SHOWN IN FIG. 2. NOW PUSH FORWARD ON KNOB (B) AND LIFT BACK PLATE (F) FROM SLOTS IN CASING.

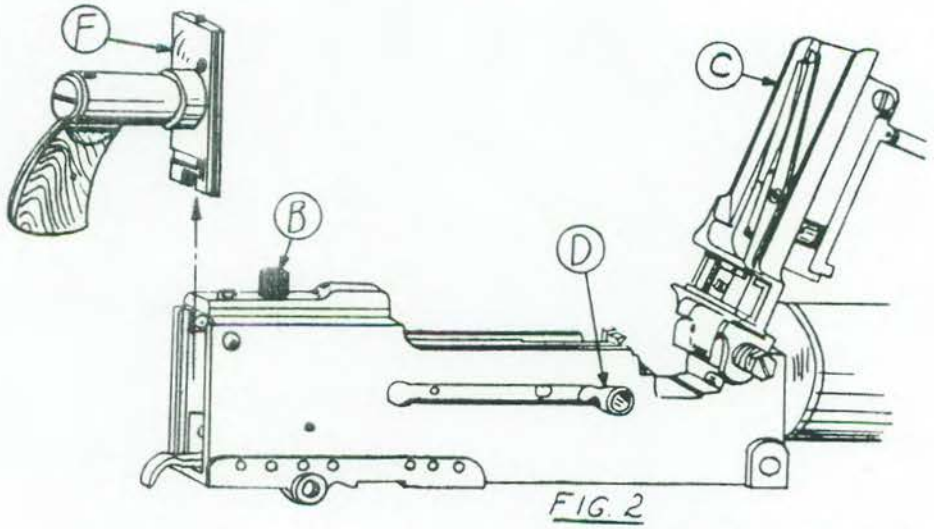

FIG. 2

SMALL ARMS GUN, MACHINE CAL. 30 BROWNING M1917A1	DISMANTLING	SHEET 2 OF 4

REMOVE BOLT ASSEMBLY

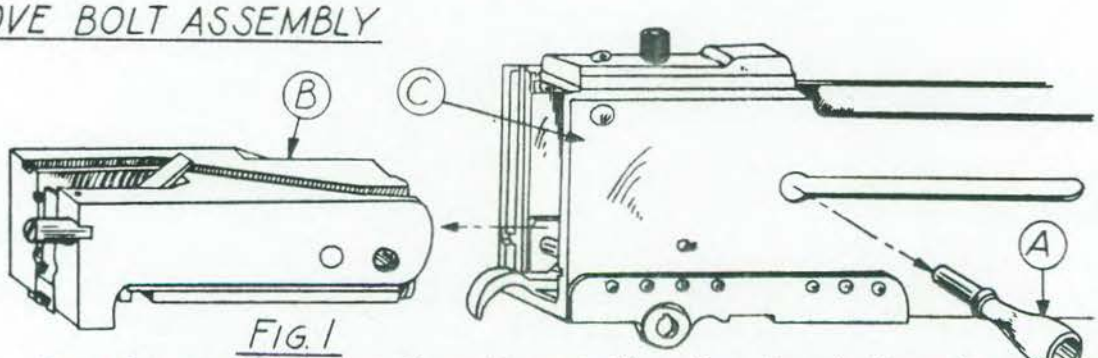

FIG. 1

(2) PULL BOLT HANDLE (A), FIG. 1, BACK UNTIL IT WILL PULL OUT OF HOLE AT REAR OF SLOT. NOW PULL BOLT ASSEMBLY (B) OUT OF CASING.

REMOVE COVER LATCH ASSEMBLY

(3) PULL STRAIGHT BACK ON LATCH (X), FIG. 2, AND IT WILL COME OUT OF SLOTS.

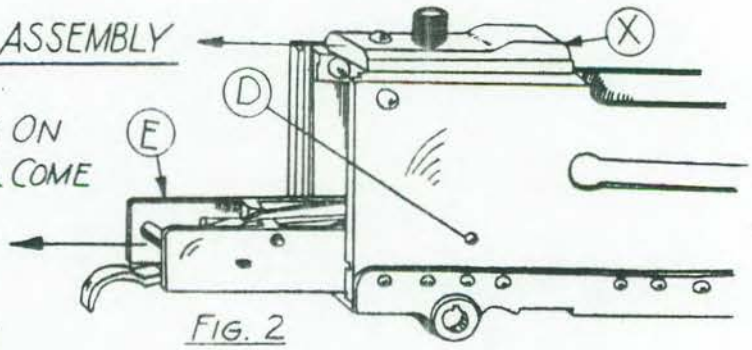

FIG. 2

REMOVE LOCK FRAME, BARREL EXTENSION AND BARREL ASSEMBLIES

(4) WITH A SMALL PUNCH, PRESS IN ON PIN IN HOLE (D), FIG. 2, AND PULL STRAIGHT BACK ON LOCK FRAME (E) AS SHOWN BY ARROW. BARREL (F), FIG. 3, AND BARREL EXTENSION (G) WILL COME OUT WITH LOCK FRAME (E).

TO DISMANTLE LOCK FRAME (E) FROM BARREL EXTENSION (G), PUSH FORWARD ON ACCELERATOR (H) WITH THUMB, AND THE TWO PIECES WILL COME APART.

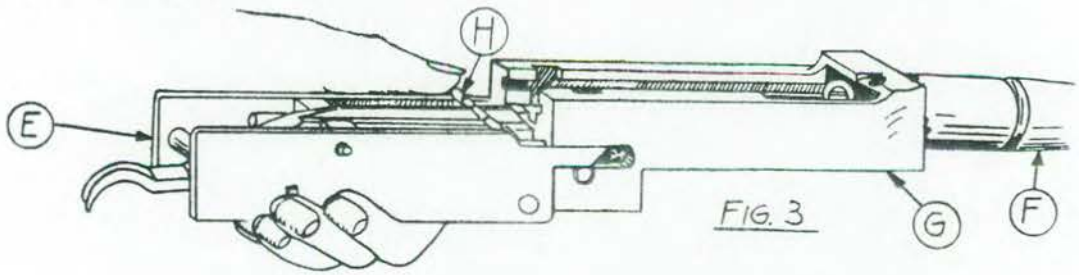

FIG. 3

SMALL ARMS GUN, MACHINE CAL. 30 BROWNING M1917A1	DISMANTLING	SHEET 3 OF 4

REMOVE COVER ASSEMBLY

(5) REMOVE COTTER PIN Ⓐ, FIG. 1, AND TAKE OFF NUT Ⓑ. PULL OUT COVER BOLT Ⓒ. MOVABLE PLATE Ⓓ, FIXED PLATE Ⓔ AND SPRING Ⓕ WILL COME OFF WHEN Ⓒ IS REMOVED. COVER Ⓖ WILL NOW LIFT OFF CASING Ⓗ.

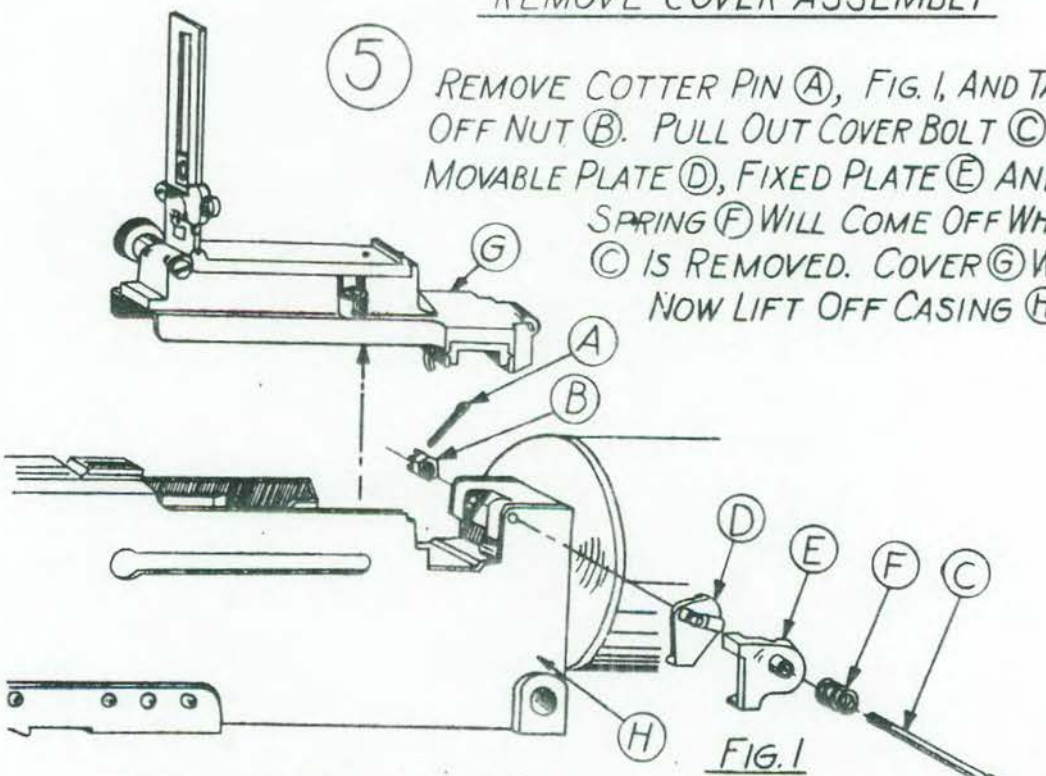

FIG. 1

DISMANTLE CASING

(6) PULL OUT BELT HOLDING PAWL PIN Ⓚ, FIG. 2, AND PAWL Ⓛ AND SPRING Ⓜ WILL BECOME FREE.

NOTE: HOLD Ⓛ IN PLACE WHEN REMOVING PIN Ⓚ TO KEEP IT FROM FLYING OUT. REMOVE SCREW Ⓝ FROM UNDERSIDE OF CASING Ⓡ AND BREECHLOCK CAM Ⓟ WILL COME OUT FROM UNDERSIDE OF Ⓡ AS SHOWN BY ARROW.

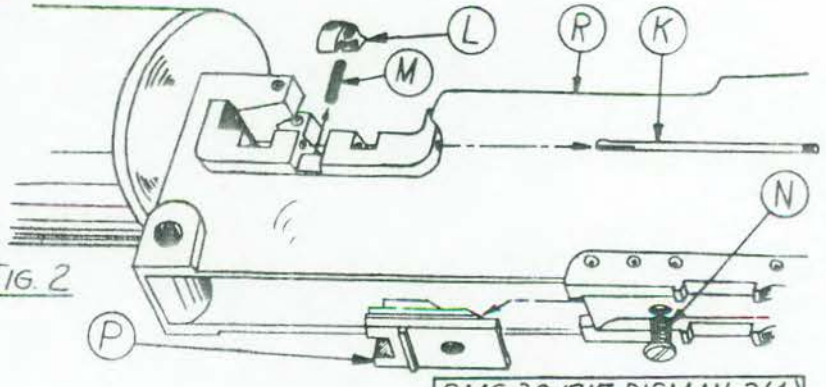

FIG. 2

SMALL ARMS GUN, MACHINE CAL. 30 BROWNING M1917A1	DISMANTLING	SHEET 4 OF 4

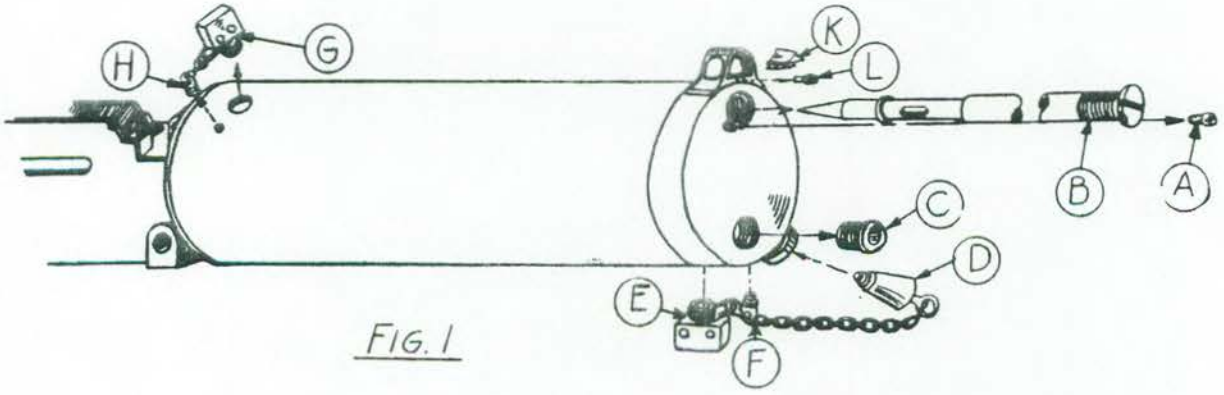

FIG. 1

DISMANTLE WATER JACKET

(7) REMOVE LOCK SCREW (A) FROM MUZZLE END, AND UNSCREW AND REMOVE STEAM PIPE (B). UNSCREW MUZZLE GLAND (C). PULL CORK (D), UNSCREW WATER PLUG (E) AND UNSCREW EYE BOLT (F). ALSO REMOVE WATER PLUG (G) AND EYE BOLT (H). TAKE OUT FRONT SIGHT SCREW (L) AND DRIVE FRONT SIGHT (K) OUT OF DOVETAIL SLOT IN SIGHT BASE.

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B.S.D. No.

Overhaul 2

SMALL ARMS GUN, MACHINE CAL. 30 BROWNING M1917A1	OVERHAUL	SHEET 1 OF 25

GENERAL NOTES ON OVERHAUL OF B.M.G. CAL. 30 M1917A1

THE FOLLOWING OVERHAUL SECTION SHOWS PROCEDURE OF OVERHAULING EACH PART OF THE GUN. IT DEALS WITH THE SPECIAL OVERHAUL OF EACH PIECE. IN ADDITION TO THIS, ALL PIECES SHOULD BE CAREFULLY INSPECTED FOR CRACKS, BREAKS, IRREGULARITIES AND EXCESSIVE WEAR. BURRS MUST BE REMOVED FROM ALL SURFACES. ALL SLIDING SURFACES MUST BE CAREFULLY POLISHED, PAYING PARTICULAR ATTENTION TO SLIDING PARTS, GROOVES, FLANGES, ETC., THAT MUST WORK SMOOTHLY.

ALL PARTS SHOULD BE CHECKED FOR PROPER FUNCTIONING WITH MATING PARTS BEFORE BEING REASSEMBLED.

ALTHOUGH ALL PARTS OF THIS GUN ARE STANDARD, IT WILL BE FOUND ADVISABLE, IN SOME CASES, TO MAKE SELECTIVE FITS. IF POSSIBLE, THE PARTS SHOULD BE REASSEMBLED ON THE SAME GUN FROM WHICH THEY WERE TAKEN.

BEFORE PARTS ARE OVERHAULED, THEY ARE ALL THOROUGHLY WASHED IN A CLEANER SOLVENT SOLUTION.

DISASSEMBLE COVER ASSEMBLY

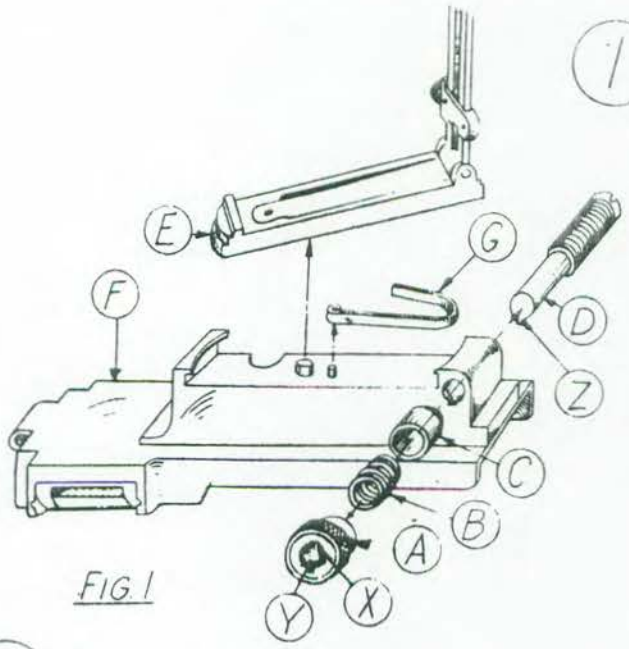


FIG. 1

(1) HOLD IN ON HEAD OF WINDAGE SCREW (D) AND PUSH WINDAGE SCREW KNOB (A) INWARD UNTIL KEY (Z) ENTERS KEYWAY (X). PULL KNOB OFF SCREW. EXTRACT SPRING (B) AND COLLAR (C). PUSH (D) OUT IN DIRECTION SHOWN AND AT THE SAME TIME PUSH ON REAR OF SIGHT (E) IN SAME DIRECTION. WHEN THREADS OF (D) DISENGAGE SIGHT, IT CAN BE REMOVED BY TURNING IT TO FREE KEYWAY IN BASE AND LIFTING IT OFF. REBOUND SPRING (G) CAN ALSO BE LIFTED OFF.

(2) UNSCREW PIVOT SCREW (H) AND REMOVE LOCK WASHER (K) AND PIVOT (L), FIG. 2. PULL BELT FEED LEVER (M) FREE OF SLOT IN COVER (W) AND REMOVE. UNSCREW NUT (R) AND REMOVE PIVOT BUSHING (P). PULL EAR OF COVER EXTRACTOR SPRING (V) OUT OF SLOT IN CAM (J) AND PULL (V) FROM SPRING STUD (Q) AND REMOVE. REMOVE BELT FEED SLIDE ASSEMBLY (N) FROM COVER AS SHOWN. DRIVE OUT BELT FEED PAWL PIN (S) AND BELT FEED PAWL (T) WILL LIFT OUT. SPRING (U) WILL ALSO COME OFF. CHECK SPRING IN PIN (S) FOR TENSION AND WEAR.

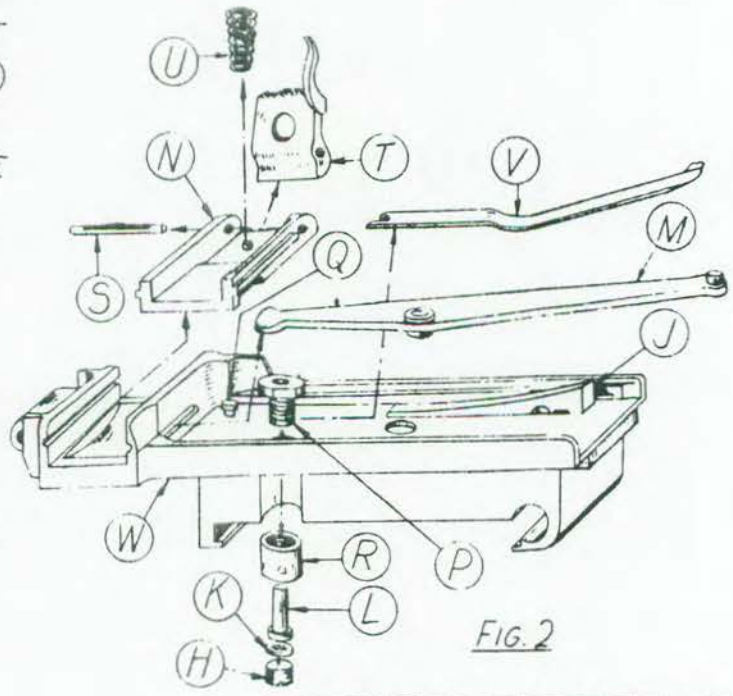
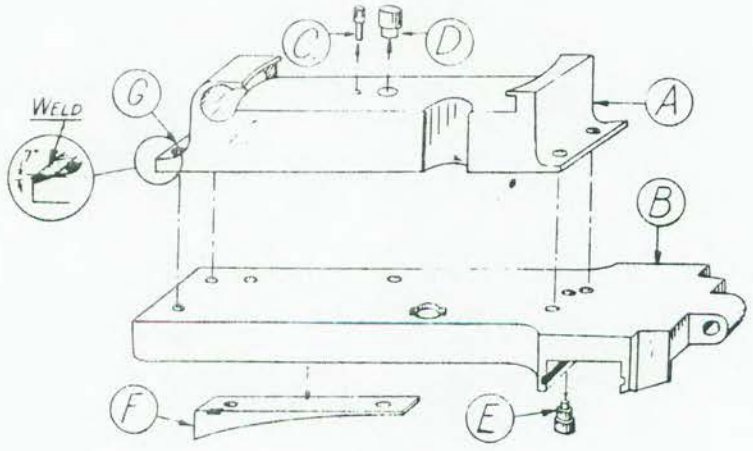


FIG. 2

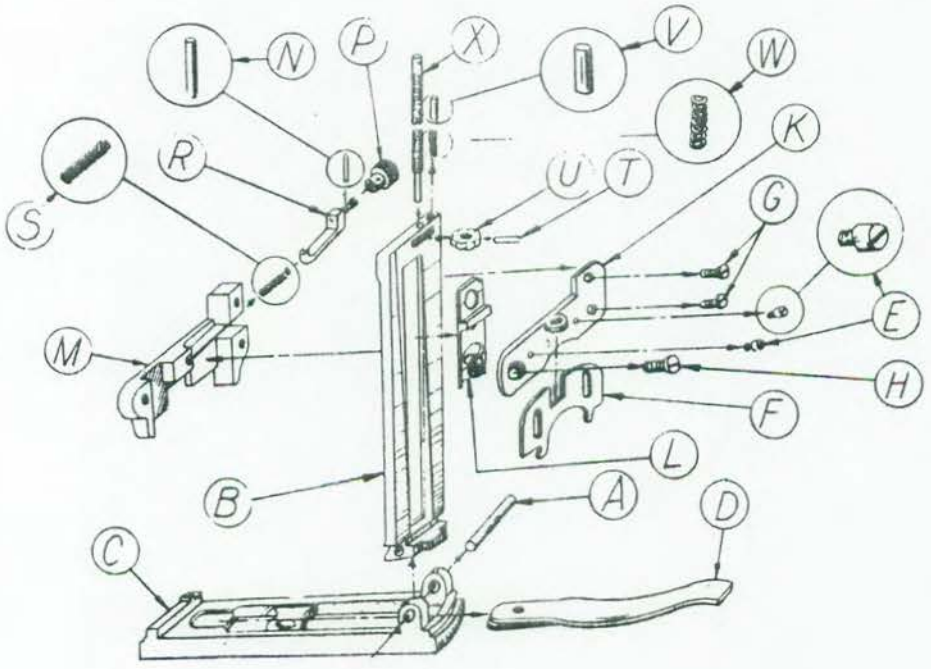


OVERHAUL COVER

(3) IF EITHER THE COVER (B) OR FIXED SIGHT BASE (A) IS RENT OR MUST BE REPLACED, REMOVE FOUR RIVETS. DRIVE OUT EXTRACTOR SPRING STUD (E) FROM COVER AS SHOWN. RELEASE COVER EXTRACTOR CAM (F) BY TAKING OUT TWO RIVETS. RIVET NEW STUD (E) (RIVETED OVER ON TOP SIDE) AND NEW CAM (F). ALL RIVET HEADS MUST BE FILED FLUSH. DRIVE OUT MOVABLE SIGHT BASE PIVOT (D) AND INSERT A NEW ONE. IF NECESSARY, RIVETING IT OVER ON UNDER SIDE. STUD (C) CAN BE PULLED OUT AT ANY TIME AND A NEW ONE DRIVEN IN. AFTER NECESSARY OVERHAUL HAS BEEN DONE TO (A) AND (B), RIVET THEM TOGETHER WITH FOUR RIVETS AND FILE HEADS FLUSH. POLISH SURFACE OF CAM (F).

WHEN IT IS NECESSARY TO BUILD UP THE SURFACE (SEE INSERT), ADD MATERIAL TO SURFACE (G) BY WELDING. RESURFACE BOTTOM FACE OF FIXED SIGHT BASE (A) WITH A FILE. FILE THE SIDES AND END TO REMOVE SCALE AND EXCESSIVE WELD. MILL THE 7° ANGLES TO A DIMENSION OVERSIZE. CAREFULLY FILE AND FIT TO MATING PART.

SMALL ARMS GUN, MACHINE CAL 30 BROWNING M1917A1	OVERHAUL	SHEET 4 OF 25



OVERHAUL SIGHTS

NOTE: SIGHTS ARE NEVER DISASSEMBLED UNLESS NECESSARY.

(4) REMOVE JOINT PIN (A) AND LIFT LEAF (B) FROM BASE (C). DRIVE SPRING (D) OUT OF SLOT IN BASE. REMOVE TWO SCREWS (E) AND PLATE (F) WILL SLIDE OFF (K) AS SHOWN. NOW REMOVE TWO SCREWS (G) AND SCREW (H), RELEASING CAP (K), SLIDE (L), FROM LEAF AND SLIDE (M). REMOVE HALF NUT (R) AND SPRING (S) FROM (M). DRIVE OUT PIN (N), AND SCREW OFF KNOB (P) FROM HALF NUT (R). DRIVE OUT PIN (T). PULL OUT SCREW (X) FROM TOP AND SLIDE HEAD (U) FROM SLOT IN LEAF, RELEASING PLUNGER (V) AND SPRING (W). CHECK LEAF FOR BENDS. STRAIGHTEN BY HAMMERING. AFTER DOING THE NECESSARY OVERHAUL OPERATIONS, REASSEMBLE SIGHT, REVERSING THE DISMANTLING PROCEDURE.

ASSEMBLE COVER ASSEMBLY

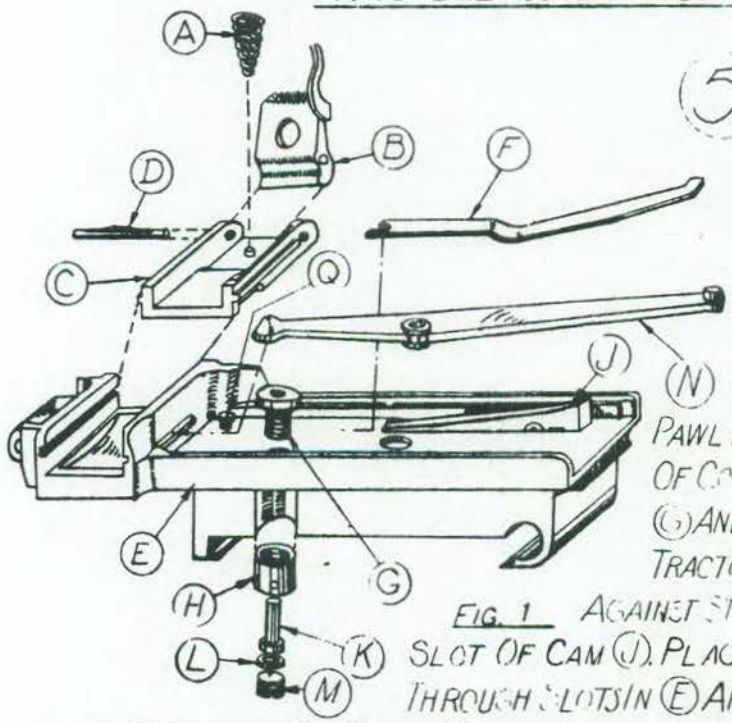


FIG. 1

(5) AFTER ALL INDIVIDUAL PARTS HAVE BEEN OVERHAULED, THE COVER CAN BE REASSEMBLED. PLACE SPRING (A) IN PLACE ON BELT SLIDE (C) AS SHOWN. PLACE PAWL (B) SO THAT SPRING (A) FITS IN HOLE ON UNDERSIDE. SECURE WITH PAWL PIN (D). PLACE SLIDE (C) IN GROOVES OF COVER (E). ASSEMBLE PIVOT BUSHING (G) AND PIVOT NUT (H). PLACE COVER EXTRACTOR SPRING (F) WITH NOTCHED END AGAINST STUD (Q) AND EAR ON OTHER END IN SLOT OF CAM (J). PLACE END OF BELT-FEED LEVER (N) THROUGH SLOTS IN (E) AND (C). PUT PIVOT (K) THROUGH (G), (H) AND (N). INSTALL LOCK WASHER (L) AND SCREW (M).

(6) PLACE REBOUND SPRING (P) FIG. 2, OVER STUD AND PLACE SIGHT (S) OVER SIGHT BASE PIVOT. PLACE WINDAGE SCREW (T) AND PUSH IN DIRECTION SHOWN BY ARROW. PUSH BASE (S) IN SAME DIRECTION AT SAME TIME. INSTALL COLLAR (U) AND SPRING (V). PLACE KNOB (W) OVER SCREW SO KEY (X) FITS INTO KEYWAY (Y). PUSH SCREW (T) THROUGH (W) SO (X) IS CLEAR OF (Y). TURN (W) ONE-HALF TURN, ALLOWING KEY (X) TO ENTER KEYWAY (Z).

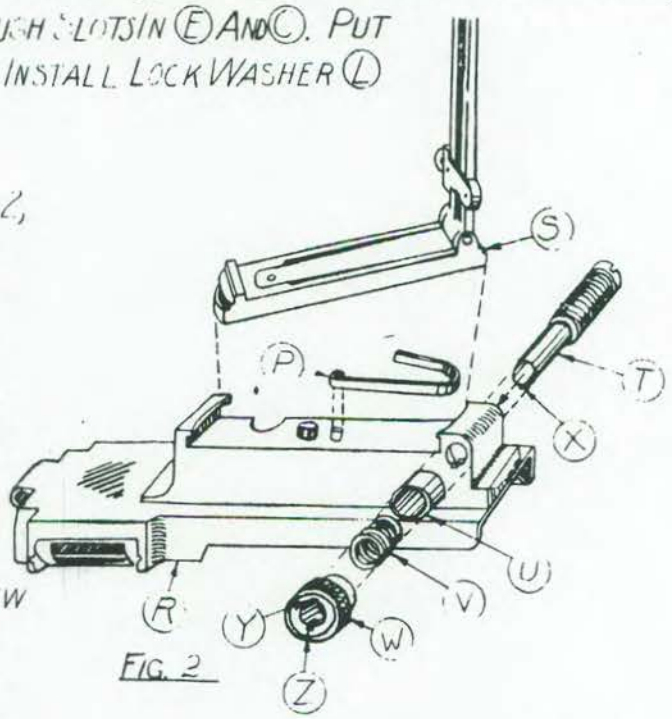


FIG. 2

SMALL ARMS GUN, MACHINE CAL. 30 BROWNING M1917A1	OVERHAUL	SHEET 6 OF 25

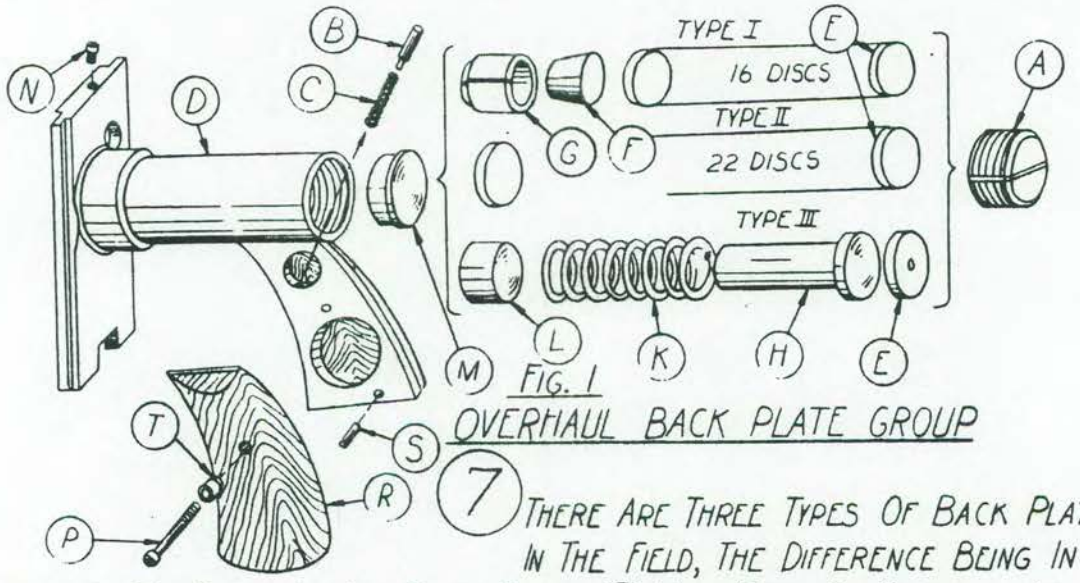


FIG. 1

OVERHAUL BACK PLATE GROUP

(7) THERE ARE THREE TYPES OF BACK PLATES IN THE FIELD, THE DIFFERENCE BEING IN THE CONTENTS OF THE TUBE. IN ALL CASES SCREW (A) MUST FIRST BE REMOVED AND PLUNGER (B) AND SPRING (C) TAKEN OUT OF TUBE (D). TYPE I NOW CONSISTS OF 16 FIBER DISCS (E), BUFFER FRICTION CONE (F) AND BUFFER FRICTION CUP (G). TYPE II CONSISTS OF 22 FIBER DISCS (E). TYPE III CONTAINS ONE FIBER DISC (E), STOP (H), SPRING (K) AND FILLER (L). ALL TYPES HAVE BUFFER PLATE (M). IF STOCKS (R) NEED REPLACING, REMOVE SCREW (P) AND ESCUTCHEONS (T), RELEASING HANDLES. PIN (S) MAY BE DRIVEN OUT AND REPLACED IF NECESSARY. SCREW (N) SHOULD BE TIGHT. CHECK GRIP (U), FIG. 2, IN PLATE (X). IF GRIP IS LOOSE, PIN (W) IS REMOVED AND GRIP (U) UNSCREWED FROM PLATE (X).

(8) FILE DOWN SURFACE (V) A LITTLE LESS THAN THE PITCH OF ONE THREAD, OR UNTIL GRIP (U) WILL TIGHTEN UP IN THE PROPER POSITION. INSTALL NEW PIN (W). REASSEMBLE BACK PLATE IN REVERSE PROCEDURE OF THE DISMANTLING. BE SURE TO TIGHTEN UP SCREW (A) EXCEPT ON THE LAST METHOD WHEN (K) IS USED. TIGHTEN (A) UP UNTIL (M) PROJECTS ABOUT 1/32 IN. BEYOND EDGE OF PLATE WHEN THE SPRING IS COMPRESSED SOLID.

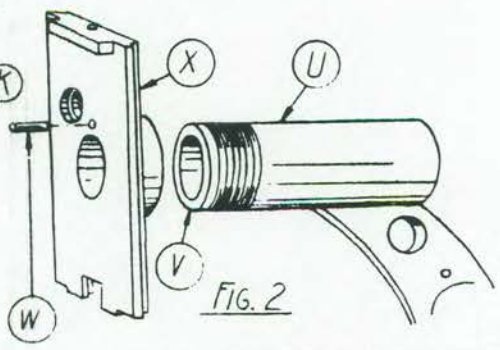
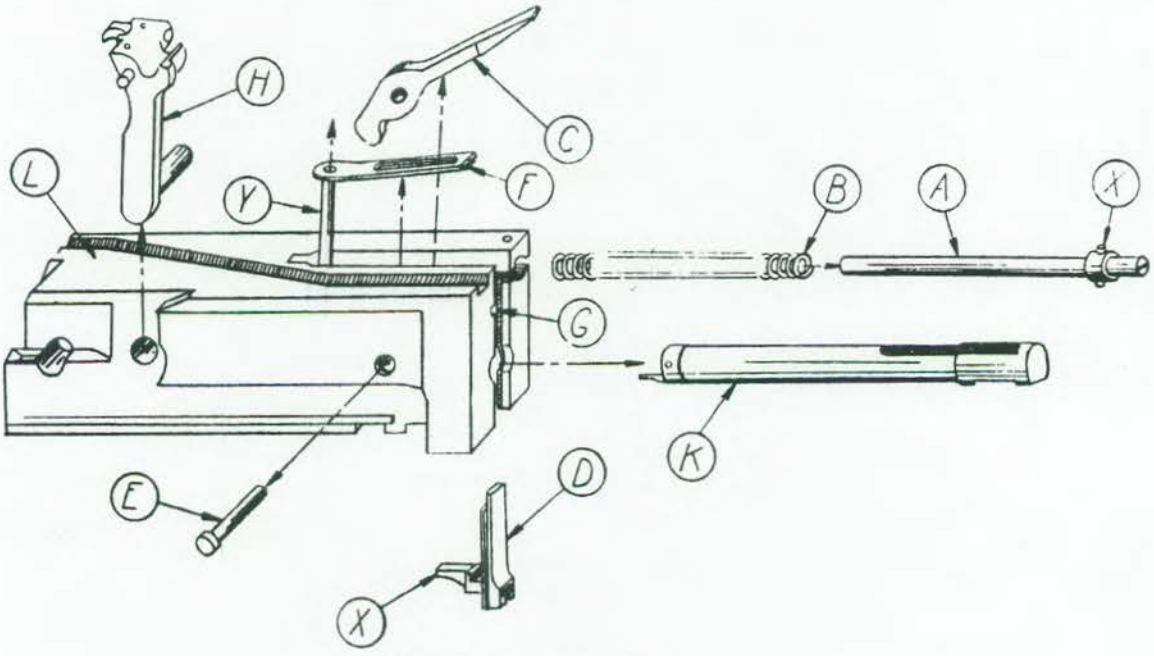


FIG. 2



OVERHAUL BOLT

(9) RAISE EXTRACTOR (H) TO A VERTICAL POSITION TO DISENGAGE SLOT IN BOLT AND PULL OUT AS SHOWN. PULL OUT PIN (E) AND REMOVE LEVER (C). PRESS DOWN ON END OF SPRING (F) AND PUSH INTO SLOT (G) IN SIDE OF BOLT. PRESS DOWN ON SEAR (D) TO RELEASE IT. DISENGAGE SPRING (F) FROM SLOT (G) AND PULL (F) OUT OF BOLT. FIRING PIN (K) WILL NOW SLIDE OUT IF BOLT IS TIPPED WITH BREECH END DOWN. REMOVE DRIVING SPRING (B) AND DRIVING SPRING ROD (A). CAUTION SHOULD BE TAKEN IN REMOVING ROD (A) DUE TO THE STRENGTH OF SPRING (B). THE FOLLOWING PROCEDURE HAS BEEN FOUND THE SAFEST AND EASIEST. GRASP THE BOLT FIRMLY IN RIGHT HAND AND REST THE NOTCHED END OF ROD (A) AGAINST A BENCH. TAKE A FIRM GRIP AROUND END OF (A) WITH LEFT THUMB AND FOREFINGER. PRESS DOWN ON BOLT AND ROTATE 1/4 TURN TO THE LEFT UNTIL PINS (X) ARE DISENGAGED FROM SLOT IN BOLT. ALLOW BOLT TO RAISE SLOWLY UNTIL SPRING CAN BE GRASPED FIRMLY IN LEFT HAND. NOW RAISE BOLT QUICKLY AND SPRING (B) AND ROD (A) WILL COME OUT.

OVERHAUL EXTRACTOR AND FIRING PIN

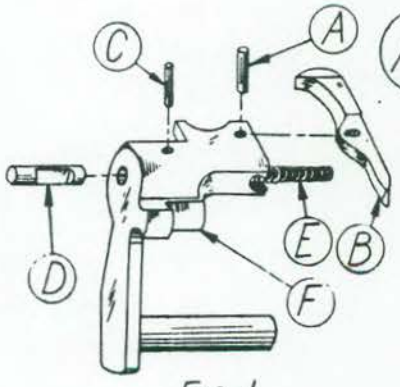


FIG. 1

(10) IF EXTRACTOR (F) REQUIRES DISASSEMBLY, REMOVE PIN (C) AND PLUNGER (D) WILL COME OUT, ALSO SPRING (E). SPRING (E) CAN BE REMOVED FROM EITHER SIDE. REMOVE PIN (A) RELEASING EJECTOR (B), WHICH SHOULD BE CHECKED FOR WEAR. AFTER SPRING (E), EJECTOR (B) AND PLUNGER (D) ARE PUT BACK IN PLACE, PINS (A) AND (C) ARE DRIVEN IN AND STAKED.

NOTE: BE SURE PIN (C) LINES UP WITH SLOT IN (D).

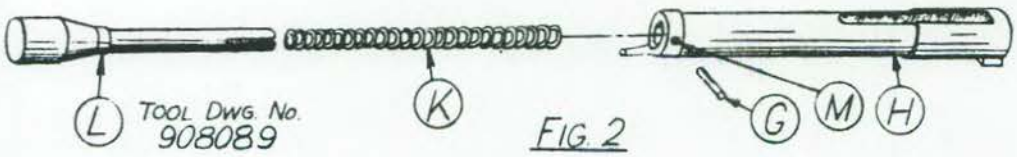
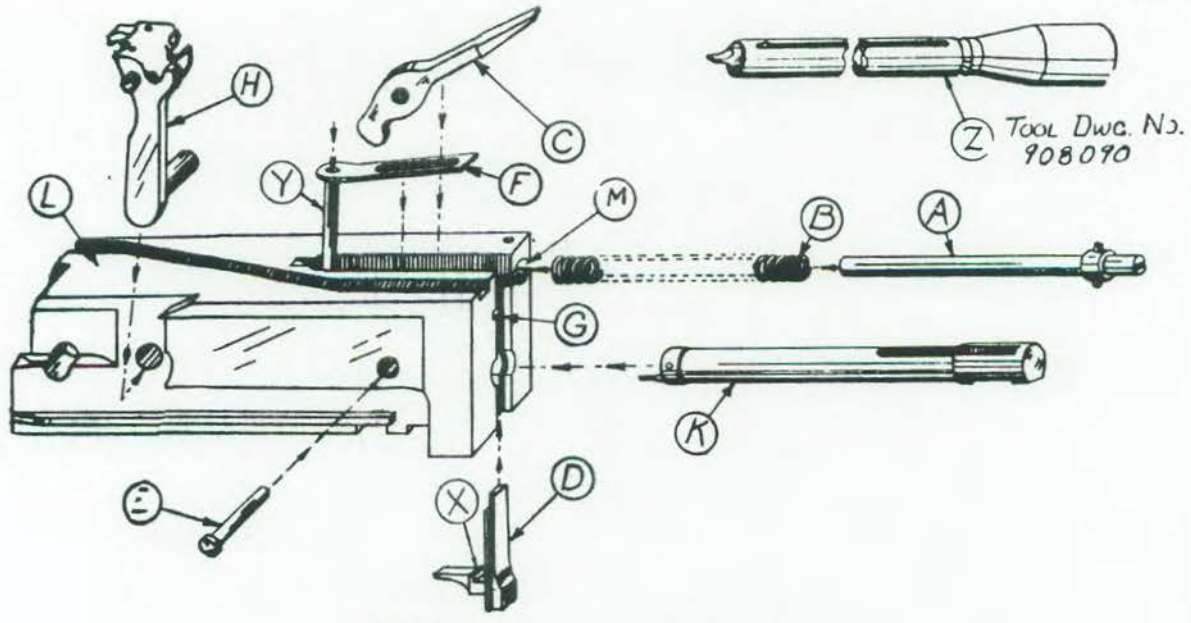


FIG. 2

(11) FIRING PIN (H) HAS A SPRING INSIDE, WHICH SHOULD BE REMOVED ONLY WHEN FOUND NECESSARY. DRIVE OUT PIN (G), RELEASING SPRING (K). POLISH PIN (H) CAREFULLY. TOOL (L) IS USED TO PUT SPRING (K) INTO PIN (H). PUSH IN SPRING (K) UNTIL OUTER END IS IN BEYOND HOLE (M). TURN TOOL (L) UNTIL SLOT IN END LINES UP WITH HOLE (M) AND INSTALL PIN (G). REMOVE TOOL. ALL OTHER PARTS OF THE BOLT AS SHOWN IN FIGURE 1, SHEET 7, MUST BE CHECKED CLOSELY. DUE TO THE IMPORTANT FUNCTION OF THE BOLT GROUP.



ASSEMBLE BOLT GROUP

(12) IF PIN (Y) IS LOOSE IN SPRING (F) IT SHOULD BE RIVETED OVER ON THE END. SEAR (D) ALSO SHOULD BE GIVEN SPECIAL INSPECTION. NOSE (X) SHOULD HAVE SHARP CORNERS, BUT ALL OTHER CORNERS OF (D) SHOULD BE SLIGHTLY ROUNDED.

(3) PLACE FIRING PIN (K) IN BOLT (L). INSERT SPRING (F) FROM TOP AND PUSH INTO SLOT (G) INSIDE OF BOLT. SLIDE SEAR (D) IN BOLT AS FAR AS IT WILL GO AND PULL (F) OUT FROM SLOT (G), THUS LOCKING (D) IN PLACE.

(14) INSTALL LEVER (C) AND SECURE WITH PIN (E). PLACE EXTRACTOR (H) IN A VERTICAL POSITION AND PUSH IT INTO BOLT AS FAR AS IT WILL GO. NOW TURN (H) HORIZONTALLY, FITTING IT IN KEYWAY OF BOLT. INSERT ROD (A) AND SPRING (B) IN SPECIAL TOOL (Z). HOLD END OF TOOL (Z) FIRMLY AGAINST HOLE (M) OF BOLT. PUSH TOOL (Z) FORWARD, COMPRESSING SPRING (H) IN HOLE (M). WHEN ROD (A) IS FITTED SNUGLY, TURN 1/4 TURN TO THE RIGHT. THIS LOCKS ROD (A) IN BOLT.

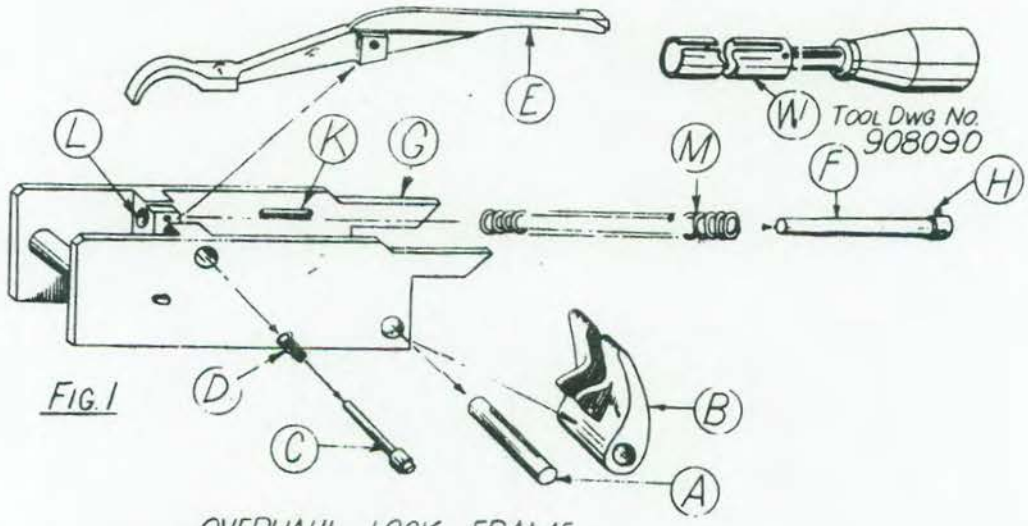


FIG. 1

OVERHAUL LOCK FRAME

(15) PUSH OUT PIN (A) AND LIFT ACCELERATOR (B) FROM FRAME (G). DRIVE OUT PIN (C) WITH A SMALL PUNCH, RELEASING TRIGGER (E) AND SPRING (D). CAUTION SHOULD BE USED TO KEEP SPRING (M) FROM FLYING OUT WHEN REMOVING. PRY PIN (H) OF PLUNGER (F) FROM SLOT (K) IN FRAME (G), RELEASING SPRING AND PLUNGER. THE LOCK FRAME CONSISTS OF THREE MAIN PARTS: RIGHT SIDE (S), LEFT SIDE (R) AND SEPARATOR (T), ALL RIVETED TOGETHER, FIG. 2. THEY CAN BE TAKEN APART BY REMOVING RIVET (N) AND SPACER (P). REASSEMBLE WITH NEW RIVET (N) AND SPACER (P). GUIDES (U) AND STOP (V) MAY BE DRIVEN OUT IF NECESSARY. NEW ONES ARE INSERTED AND RIVETED OVER. GUIDES (U) ARE ROUND WHEN NEW AND MUST BE MILLED TO PROPER SHAPE AFTER ASSEMBLY.

(16) TEST SPRING IN PIN (A) AND SPRING (M) FOR TENSION. SPRING (M) HAS A FREE LENGTH OF 4.45"-.05. IT SHOULD STAND A LOAD OF NOT LESS THAN 12 POUNDS AT 1.85" HEIGHT.

(17) NOW REASSEMBLE IN REVERSE PROCEDURE FROM THAT USED IN ASSEMBLY. TOOL (W) IS USED TO ASSEMBLE SPRING (M) AND PLUNGER (F) INTO HOLE.

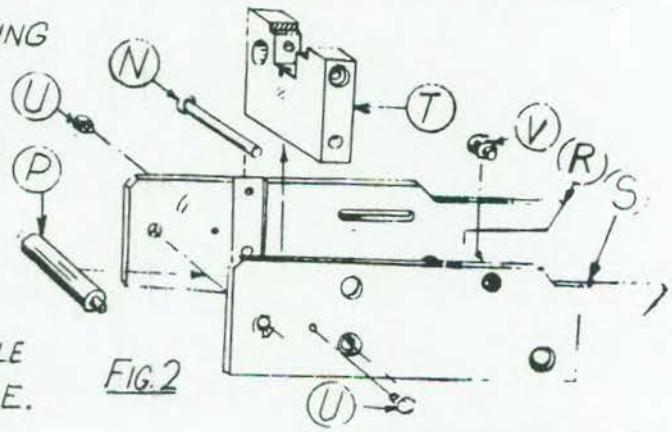
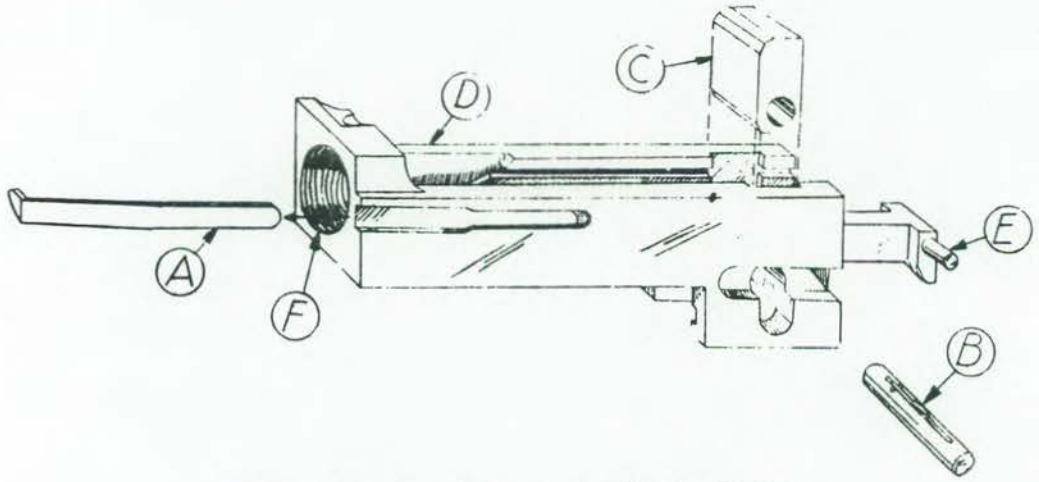


FIG. 2

SMALL ARMS GUN, MACHINE CAL. 30 BROWNING M 1917A1	OVERHAUL	SHEET 11 OF 25



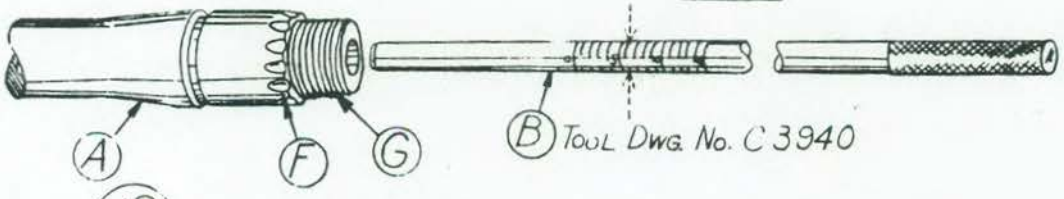
OVERHAUL BARREL EXTENSION

(18) REMOVE SPRING (A) AS SHOWN AND CHECK FOR CRACKS AND TENSION DRIVE OUT PIN (B) AND REMOVE LOCK (C). INSPECT THREADS (F) IN END OF EXTENSION (D). IF STUD (E) IS BROKEN, IT SHOULD BE REMOVED AND A NEW STUD RIVETED IN. IF OLD STUD (E) IS LOOSE IT SHOULD BE TIGHTENED BY RIVETING OVER THE END. POLISH CAREFULLY THE GROOVES ON INSIDE OF EXTENSION (D). ALSO POLISH LOCK (C). MAKE SURE THE BEVELED EDGES ARE SMOOTH. INSPECT SPRING IN PIN (B) FOR TENSION. NOW REASSEMBLE EXTENSION, BY INSERTING LOCK (C) WITH DOUBLE BEVEL EDGE UPWARD AND TO THE FRONT. PUT IN PIN (B) WITH SECURED END OF SPRING FIRST. SLIDE SPRING (A) IN SLOT ON SIDE OF (D).

SMALL ARMS GUN, MACHINE CAL 30 BROWNING M1917A1	OVERHAUL	SHEET 12 OF 25

OVERHAUL BARREL

FIG. 1



(19) BARREL IS SIGHTED THROUGH TO CHECK FOR PITS, RUST AND WEAR AND FOR STRAIGHTNESS. IF GAGE (B) INSERTED IN BREECH END PASSES THE 6" MARK, IT IS REJECTED. ANYTHING LESS THAN 6" IS ACCEPTED. IF .302" GAGE (C) ENTERS THE BARREL END OVER ONE INCH THE BARREL IS REJECTED, FIG. 2. NOW INSERT .2998" GAGE (E) THROUGH BARREL. THE .2998" (E) MUST GO ALL THE WAY THROUGH THE BARREL OR THE BARREL IS REJECTED.

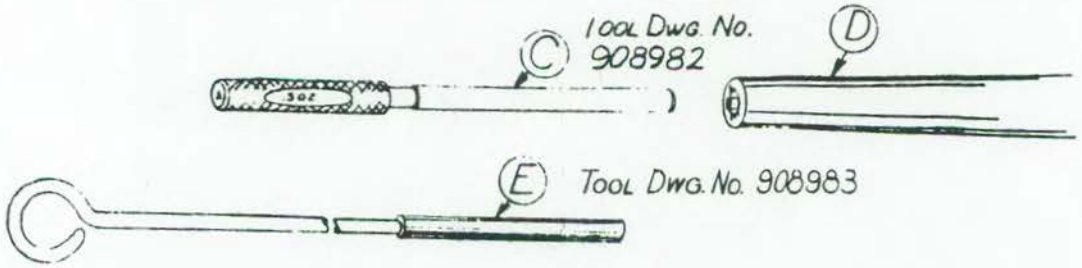


FIG. 2

(20) IF NOTCHES (F) ARE WORN SO THEY WILL NOT HOLD THE SPRING, THE BARREL CAN NOT BE USED. INSPECT THREADS (G) ON BREECH END OF BARREL.

OVERHAUL WATER JACKET

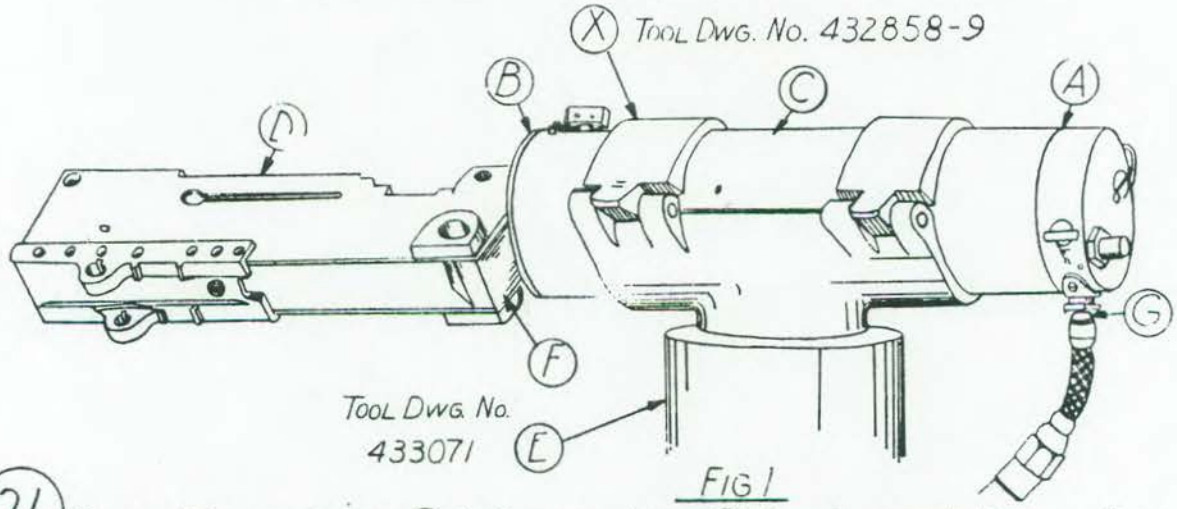


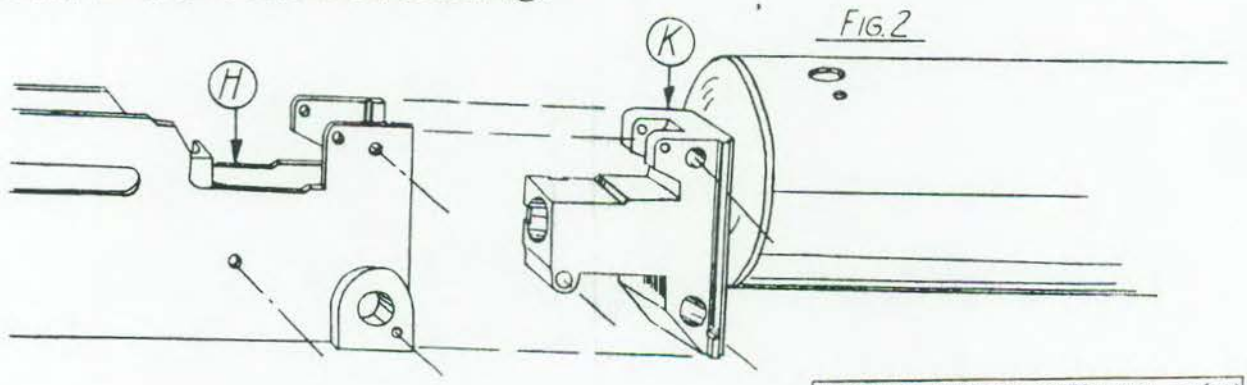
FIG 1

(21) PLACE WATER JACKET (C) IN SPECIAL VISE (E) AND CLAMP IN PLACE. PLUG UP ALL HOLES IN WATER JACKET EXCEPT THE ONE AT (G). ASSEMBLE A BARREL IN THE JACKET AND SECURE IN PLACE SO IT WILL NOT COME OUT WHEN AIR PRESSURE IS APPLIED. COAT JOINTS (A) AND (B) AND ALL OF TRUNNION BLOCK (F) WITH SOAP SUDS. CONNECT AIR HOSE WITH CONNECTION (G) AND APPLY ABOUT 33 LBS. PRESSURE. REMOVE ANY PART ADJACENT TO A LEAK. IF THE LEAK IS DUE TO A CRACK, RENEW THE PART. IF A LEAKY CONNECTION APPEARS, SWEAT PART BACK ON.

REMOVE CASING

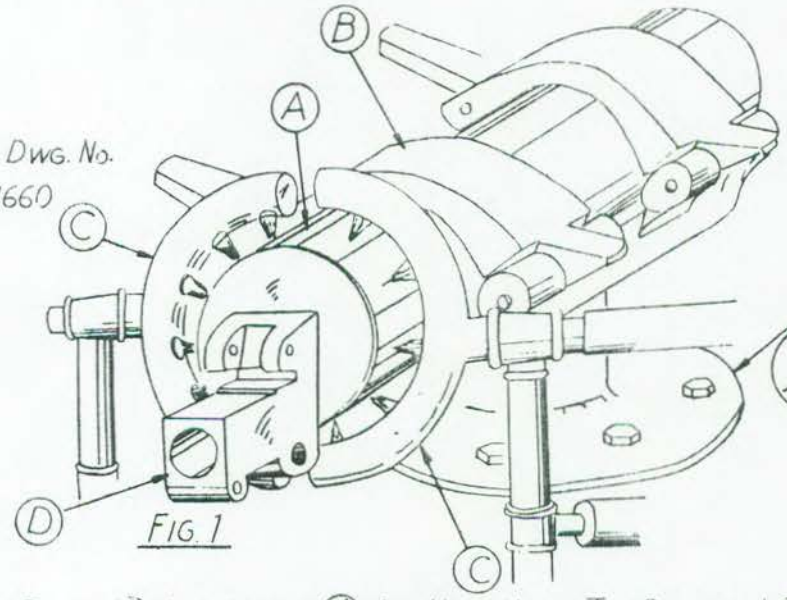
(22) IF THE TRUNNION IS CRACKED, REMOVE CASING. THE CASING (H), FIG. 2, IS HELD ON BY THREE RIVETS TO TRUNNION BLOCK (K).

FIG. 2



REMOVING TRUNNION BLOCK

TOOL DWG. No. 432858-9



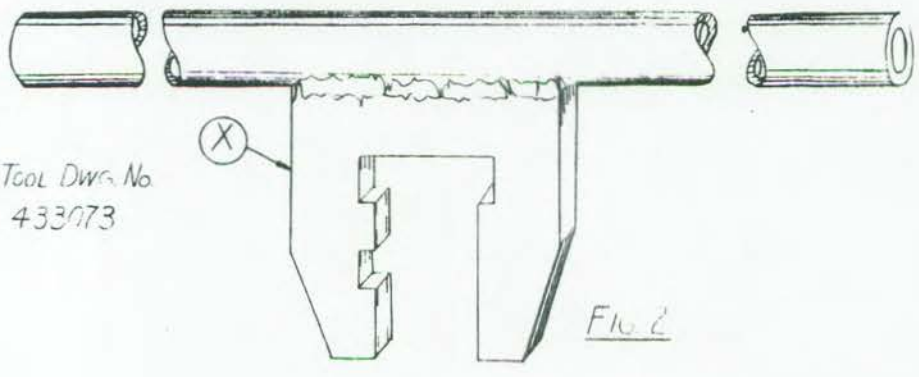
TOOL DWG. No. 421660

FIG. 1

(X) TOOL DWG. No. 433071

23 CLAMP TIGHTLY WATER JACKET (A) IN SPECIAL VISE (B). PLACE TWO GAS BURNERS (C) INTO POSITION AROUND CONNECTION JOINT OF TRUNNION BLOCK (D) AND JACKET (A) AND HEAT UNTIL THE SOLDER IN THE JOINT IS MELTED. NOW PUT AN OLD CASING AROUND TRUNNION BLOCK IN NORMAL POSITION AND INSERT TOOL (X), FIG. 2, ON CASING. PROCEED TO UNSCREW BLOCK (D) FROM JACKET (A).

NOTE: AN OLD CASING IS USED ONLY IF THE TRUNNION BLOCK AND ORIGINAL CASING HAVE BEEN TAKEN APART.



TOOL DWG. No. 433073

FIG. 2

SMALL ARMS GUN, MACHINE CAL. 30 BROWNING M1917A1	OVERHAUL	SHEET 15 OF 25

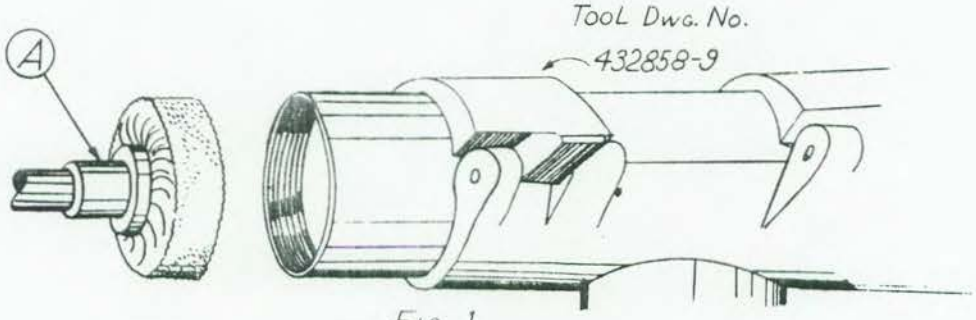


FIG. 1

CLEAN WATER JACKET

(24) AFTER THE TRUNNION BLOCK HAS BEEN REMOVED, CONTINUE HEATING JACKET UNTIL THE SOLDER IS THOROUGHLY MELTED. CLEAN INTERIOR THOROUGHLY WITH WIRE BRUSH (A) CONNECTED TO A POWER ROTOR, IF POSSIBLE.

STRAIGHTEN WATER JACKET

(25) INSERT (D), FIG. 2, IN JACKET (E) DIRECTLY UNDER THE DENT. BY FORCING (D) AGAINST THE WALLS OF JACKET AND HAMMERING ON THE OUTSIDE, MOST DENTS CAN BE REMOVED.* COAT THREADS OF JACKET AND TRUNNION BLOCK WITH SOLDER. CONTINUE HEATING. NOW SCREW TRUNNION BLOCK INTO JACKET AND TIGHTEN UP TO THE ALIGNMENT MARK.

*NOTE: BOTH THE CLEANING AND STRAIGHTENING TOOLS (A) AND (D) ARE INSERTED IN EACH END OF THE JACKET.

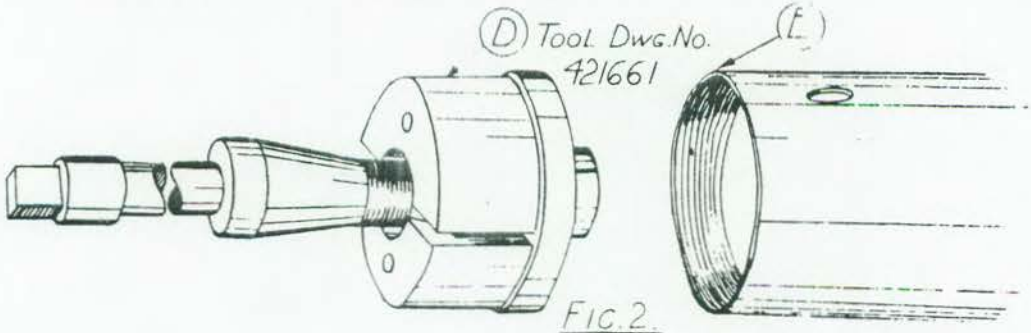


FIG. 2

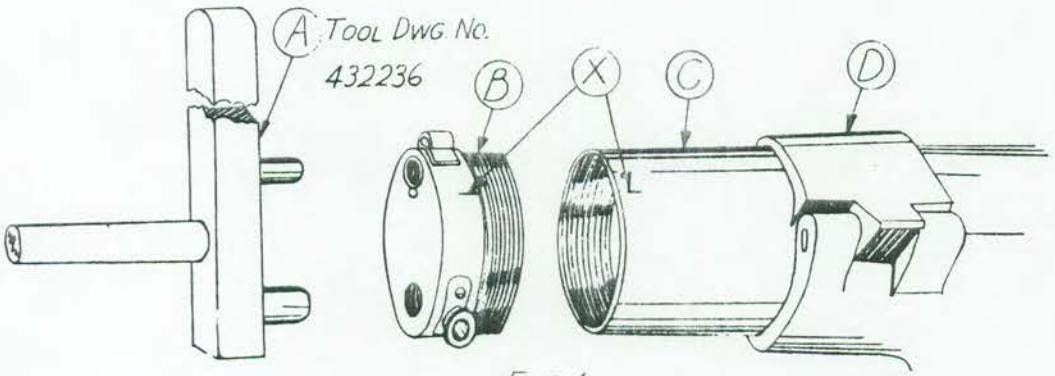


FIG. 1

REMOVE CAP

(26) TAKE A SHARP CHISEL AND CUT AN ALIGNMENT LINE (X) ACROSS CAP (B) AND JACKET (C). NOW PUT JACKET (C) IN VISE SO THE CAP END IS HEATED BY THE BURNERS IN FIG. 1, SHEET 14. REMOVE CAP WITH TOOL (A). NOW CLEAN AND STRAIGHTEN JACKET AS IN OPERATION (25). RECOAT THREADS IN JACKET (C) AND CAP (B) WITH SOLDER AND SCREW THE CAP IN. TIGHTEN UP TO ALIGNMENT MARKS (X).

DISMANTLE CAP

(27) MELT SOLDER AT FRONT SIGHT BASE (F) AND HOSE CONNECTION (H). CHIP OR DRILL OUT SCREWS (E) ON BASE (F). A SERVICEABLE BASE (F) IS THEN SOLDERED ON JACKET (G) AND TWO SCREWS (E) ARE PUT IN. FILE OFF HEADS. SOLDER ON CONNECTION (H) AND SCREW IN TWO ROUND HEAD SCREWS (K).

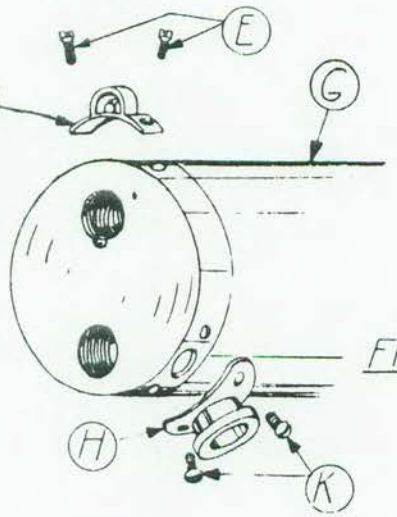
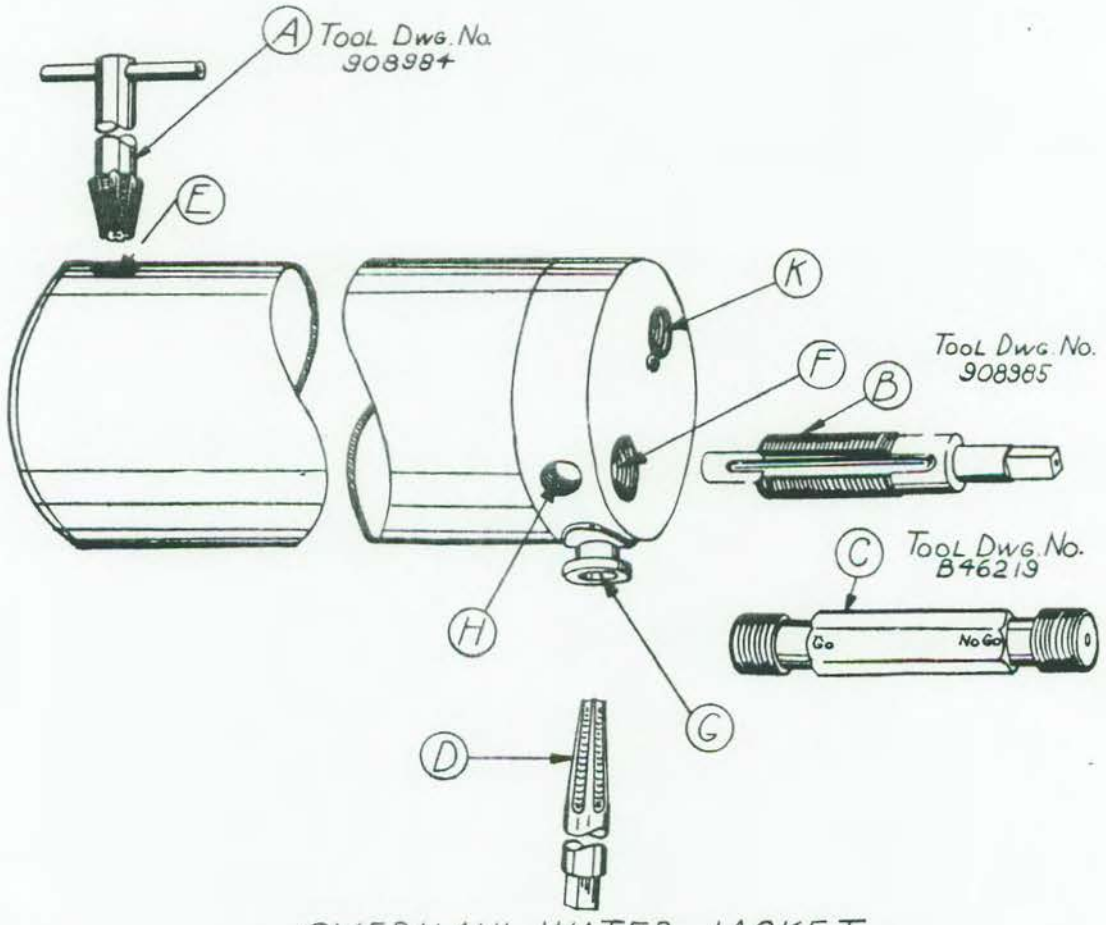


FIG. 2

SMALL ARMS GUN, MACHINE CAL .30 BROWNING M1917A1	OVERHAUL	SHEET 17 OF 25



OVERHAUL WATER JACKET

(28) CHECK HOLES (E) AND (H) WITH TAP (A). MUZZLE GLAND HOLE (F) SHOULD BE CHECKED WITH GAGE (C). IF NECESSARY, THE THREADS MAY BE RETAPPED WITH TAP (B). HOLE (G) IN THE HOSE CONNECTION SHOULD BE REAMED JUST ENOUGH TO CLEAN UP THE WALLS.

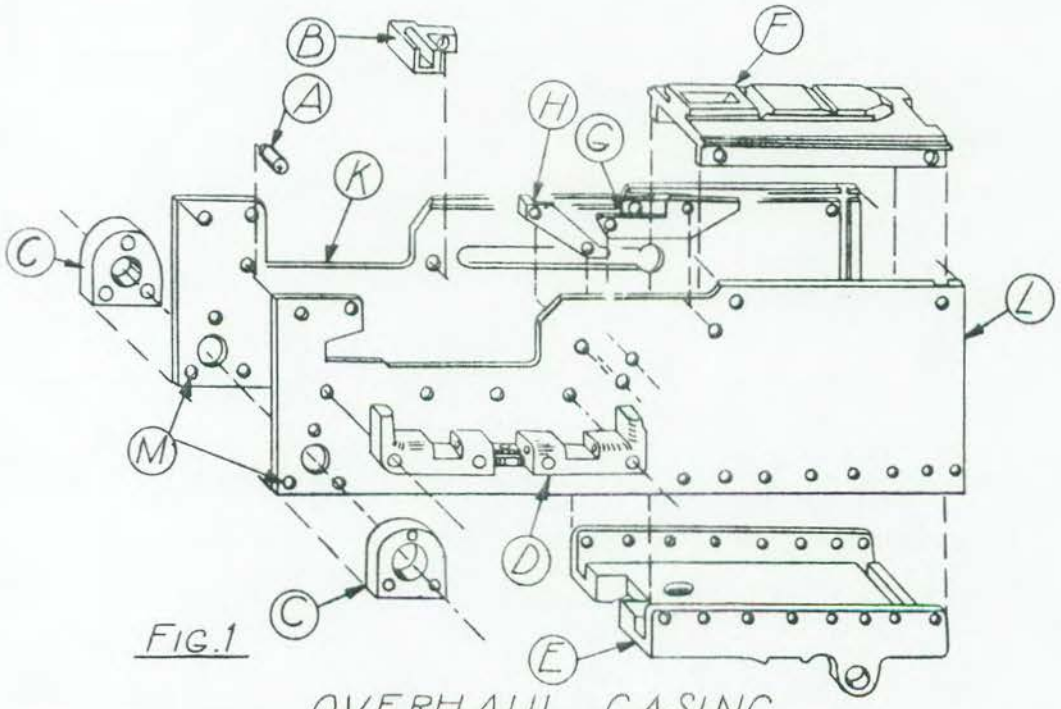


FIG.1

OVERHAUL CASING

(29) ALL PARTS OF THE CASING ARE RIVETED TOGETHER AND MAY BE REPLACED IF NECESSARY. THE PROPER PLACING OF PARTS IS SEEN IN FIG.1. BOTTOM PLATE (E) IS REMOVED BY TAKING OUT 8 RIVETS ON EACH SIDE. TOP PLATE (F) IS HELD IN PLACE BY ONE LONG RIVET THROUGH FRONT END AND ONE RIVET ON EACH SIDE OF BACK END. TRUNNION ADAPTERS (C) ARE FASTENED WITH TWO RIVETS EACH. NO RIVET IS USED IN HOLE (M) UNTIL THE TRUNNION BLOCK IS PUT ON. CAMS (H) AND (G) ARE SECURED WITH TWO RIVETS EACH.

BELT-FEED PAWL BRACKET (D) IS HELD BY FOUR RIVETS. FRONT CARTRIDGE STOP (A) CAN BE DRIVEN OUT AND REAR STOP (B) IS HELD BY ONE RIVET. STOPS (A) AND (B), CAMS (H) AND (G), ADAPTERS (C) AND BRACKET (D) CAN NOW BE RIVETED BACK ON THE PROPER SIDE PLATES (K) OR (L). (F) IS NOW PUT IN PLACE AND THE LONG RIVET IS PUT THROUGH THE FRONT HOLES AND RIVETED IN PLACE.

SMALL ARMS GUN MACHINE CAL. 30 BROWNING M1917A1	OVERHAUL	SHEET 19 OF 25

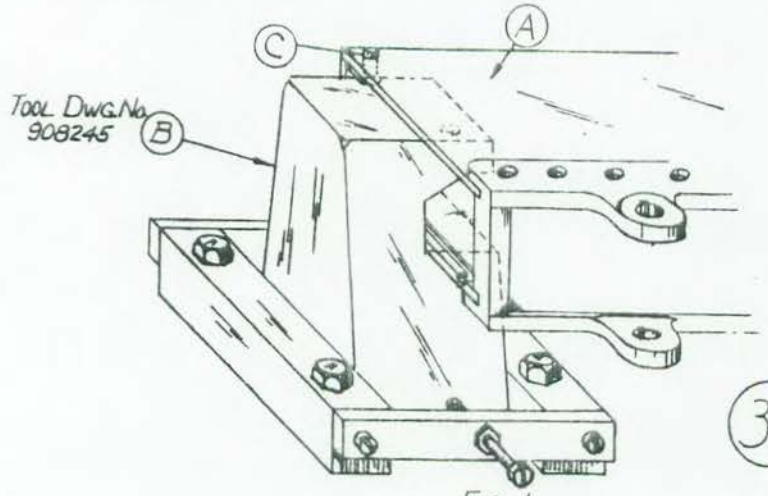


FIG. 1

RIVET TOP PLATE AND BOTTOM PLATE

(30) PLACE ROUND HEAD RIVET (C) IN SIDE PLATE (A) FROM UNDERSIDE. PLACE CASING OVER TOOL (B) SO RIVET HEAD RESTS IN CONCAVE DETENT IN (B). RIVET HEAD OVER. TURN CASING OVER AND RIVET OTHER SIDE.

GAGE BOTTOM PLATE

(31) PLACE BOTTOM PLATE (G) IN POSITION ON CASING AND CLAMP TO CASING PLATE. PUT IN GAGE (E) AS SHOWN. GAGE MUST GO IN BEFORE BOTTOM PLATE CAN BE RIVETED. REAM HOLES WITH REAMER (F).

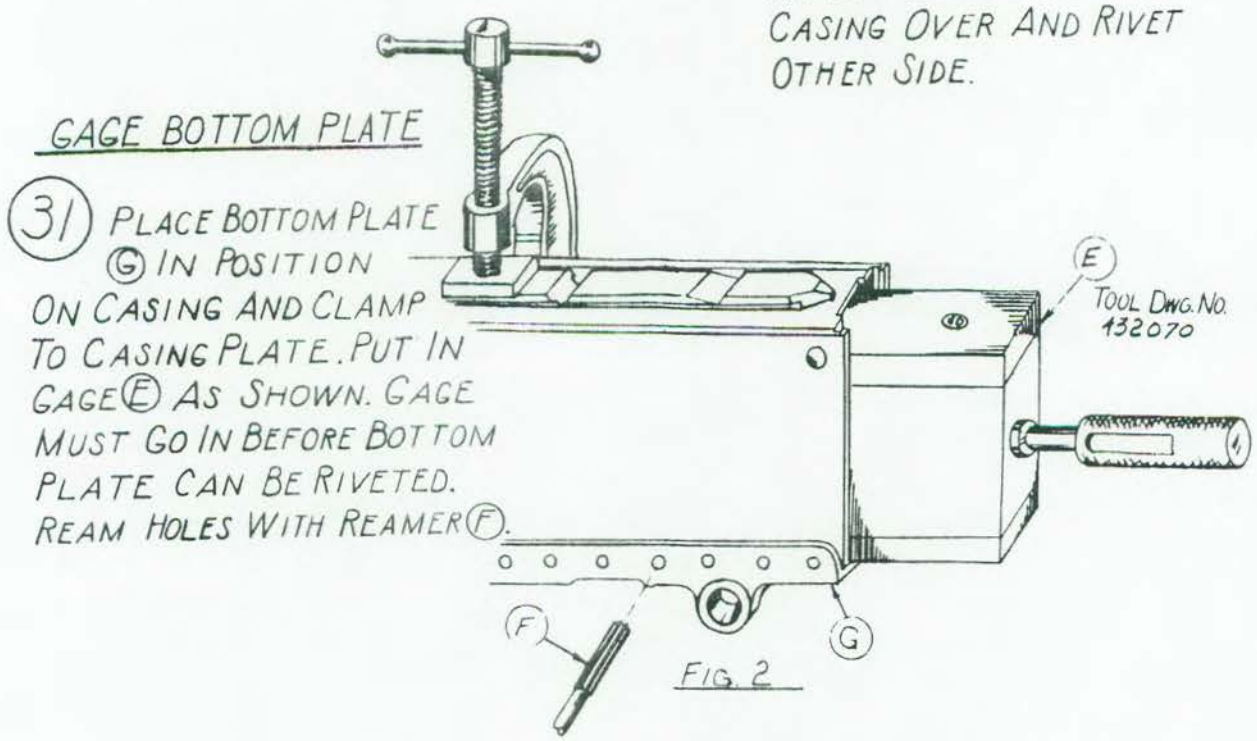


FIG. 2

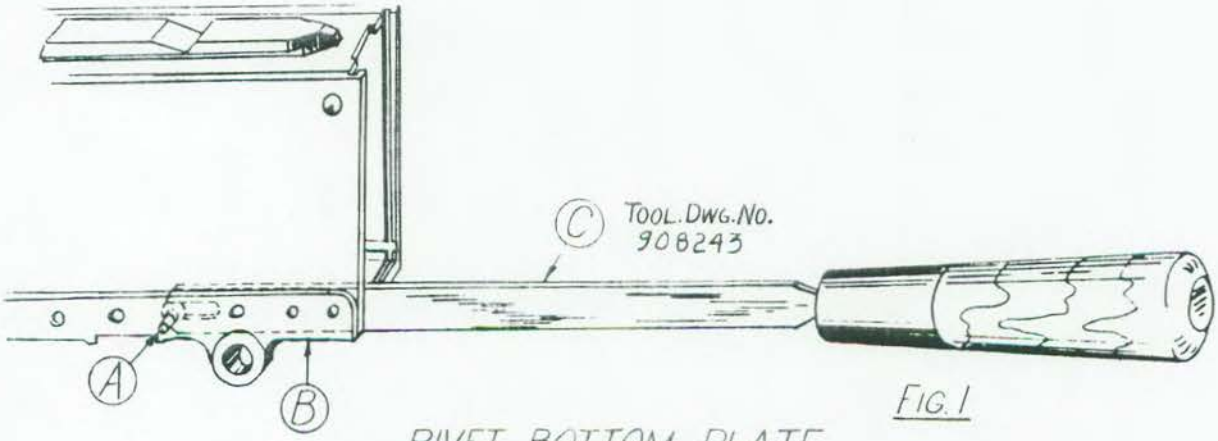


FIG. 1

RIVET BOTTOM PLATE

(32) PLACE RIVETS (A) IN HOLES WITH SPECIAL TOOL (C). THERE ARE EIGHT RIVETS ON EACH SIDE OF BOTTOM PLATE (B).

(33) PLACE TOOL (E) INSIDE CASING (D) AS SHOWN IN FIG. 2. TIGHTEN NUT (G) WITH WRENCH (F) UNTIL TOOL (E) FORCES OUT ALL RIVETS ON BOTH SIDES. RIVETS CAN NOW BE RIVETED WITH TOOL (E) STILL IN PLACE.

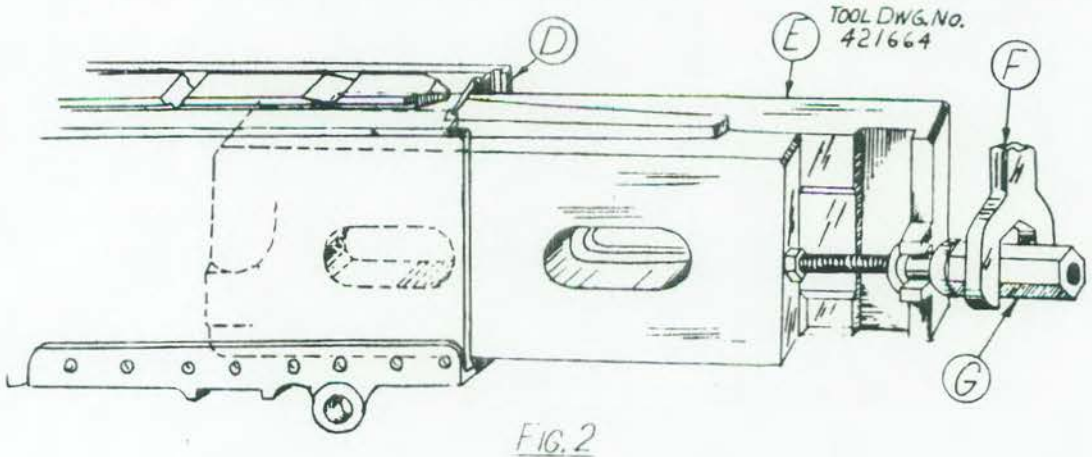


FIG. 2

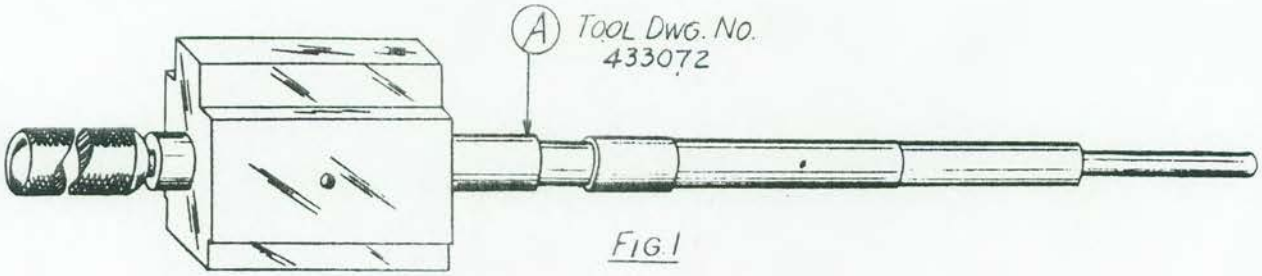


FIG. 1

RIVET CASING TO TRUNNION BLOCK

(34) PLACE CASING (B) AROUND TRUNNION BLOCK (C) AS SHOWN IN FIGURE 2. RIVETING FIXTURE (A), FIGURE 1, IS INSERTED IN CASING AND TRUNNION BLOCK AND PUSHED TIGHT. CASING CAN NOW BE RIVETED ON WITH THREE RIVETS.

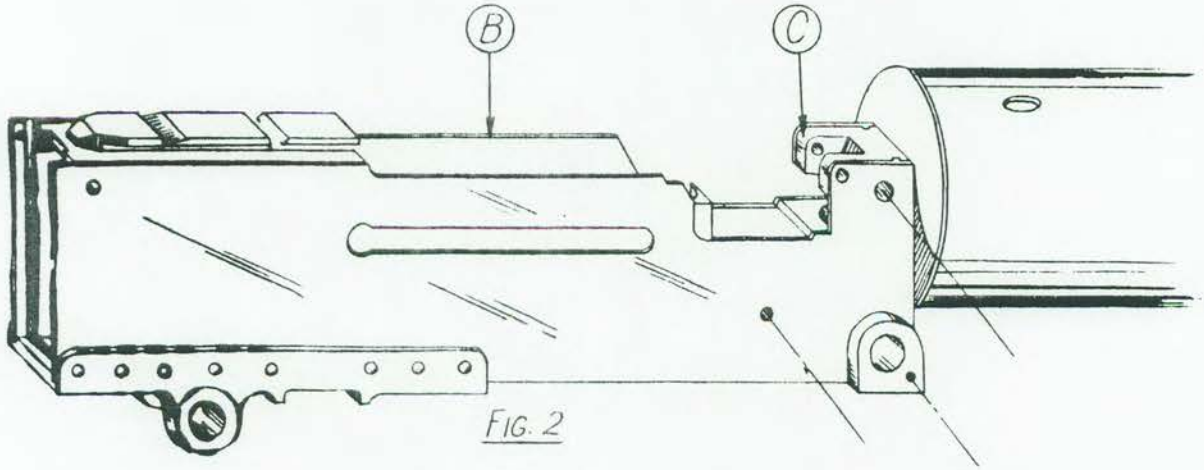


FIG. 2

REAM AND ALIGN TRUNNION BLOCK

FIG. 1.

(35) PLACE SPECIAL REAMER (A) IN BREECH END OF CASING AND PUSH FORWARD UNTIL CUTTING SECTION OF (A) IS WELL INTO TRUNNION BLOCK. PROCEED TO REAM TO 1.124"+.002.

(36) NOW INSERT GAGE (B) FROM BREECH OF CASING. GAGE (B) MUST MOVE FREELY IN CASING, AND FRONT END OF GAGE MUST ENTER MUZZLE GLAND FREELY. IF GAGE DOES NOT ENTER FREELY, THE BINDING POINTS MUST BE LOCATED AND CORRECTED.

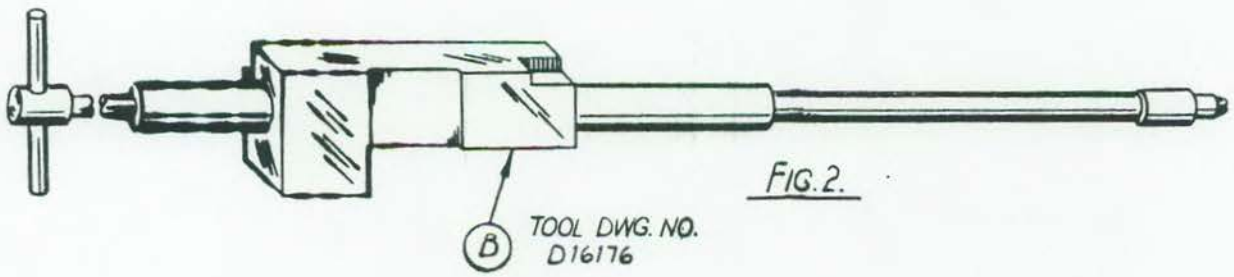


FIG. 2.

CHECK CASING

(37) CHECK EARS (C) OF BOTTOM PLATE WITH GAGE (B). THE SMALL END CHECKS INSIDE AND THE FORKED END CHECKS THE OUTSIDE DIMENSION. EARS (C) MAY BE SPREAD BY INSERTING TOOL (A) AND TIGHTENING IT UP. IF NECESSARY TO DRAW EARS TOGETHER, USE A SMALL "C" CLAMP.

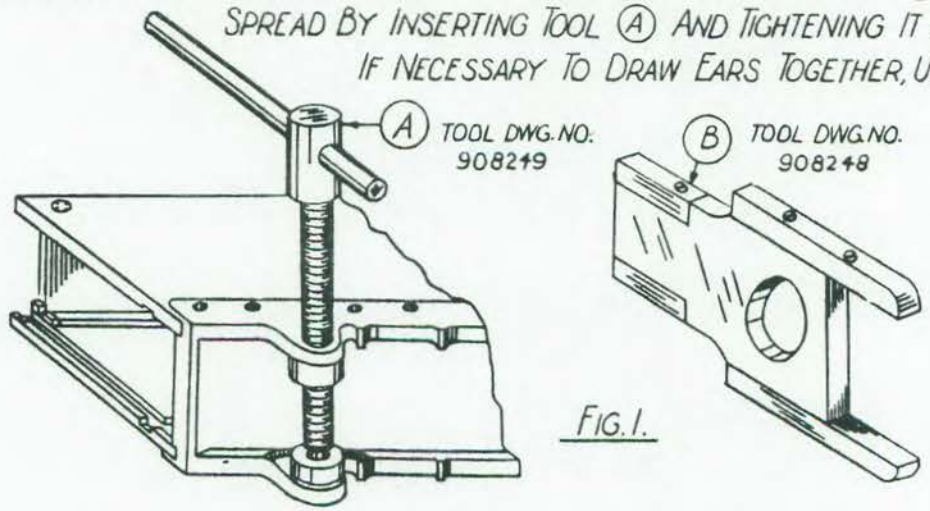


FIG. 1.

(38) THE HOLES (C) ARE NOW CHECKED WITH GAGE (G), FIG. 2, AND REAMED WITH ALIGNMENT REAMER (H) IF NECESSARY. CHECK TRUNNION HOLES (J) WITH GAGE (X), AND REAM WITH ALIGNMENT REAMER (F) IF NECESSARY. CHECK ADAPTERS (E) WITH GAGE (D). IF THE "GO" END OF GAGE WILL NOT SLIP OVER (E), FILE THE SIDE FACES OF (E) UNTIL GAGE FITS. GAGE (K) MUST MOVE UP AND DOWN FREELY OR CASING MUST BE CAREFULLY SPREAD APART.

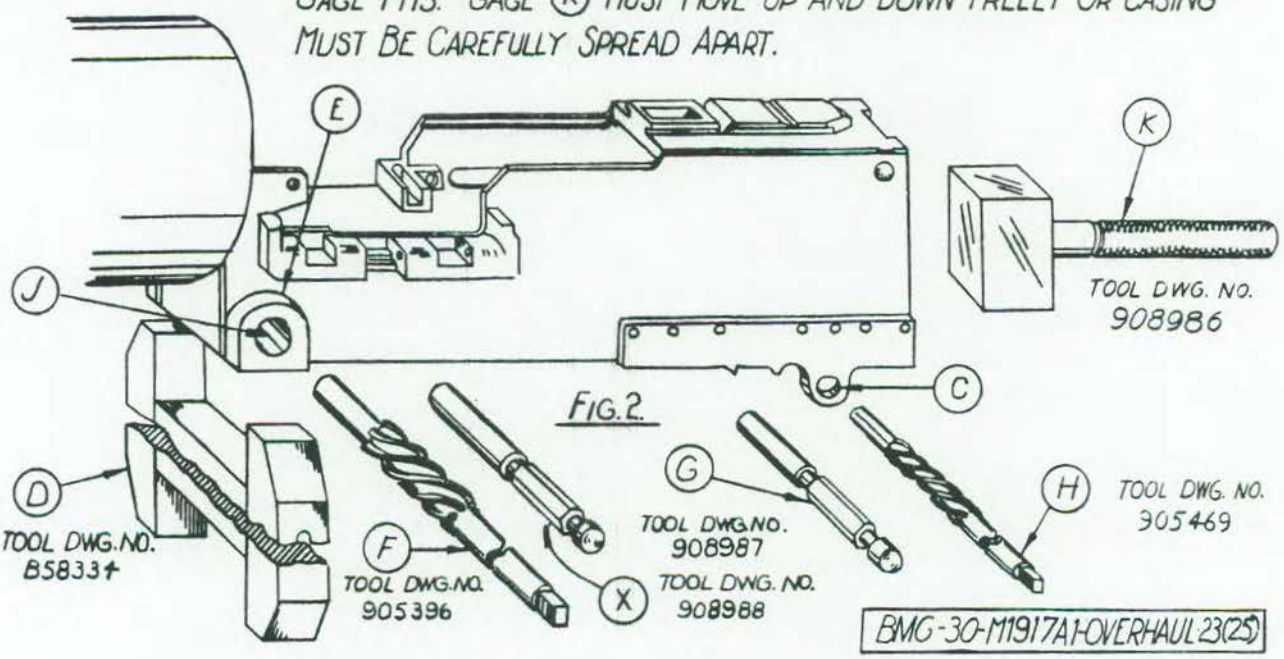


FIG. 2.

REPAIR COVER LATCH

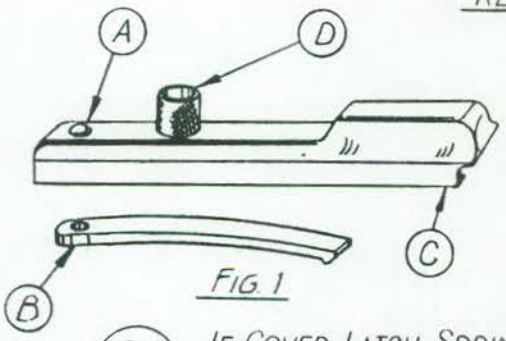


FIG. 1

39 IF COVER LATCH SPRING (B), FIGURE 1, HAS LOST ITS TENSION OR IS BROKEN, REMOVE RIVET (A). HANDLE (D) IS ALSO RIVETED ON FROM UNDERSIDE AND MAY BE REPLACED IF NECESSARY.

NOTE: SPRING (B) MUST COME OFF BEFORE HANDLE (D) CAN BE REMOVED. RIVET SPRING (B) IN PLACE WITH NEW RIVET (A).

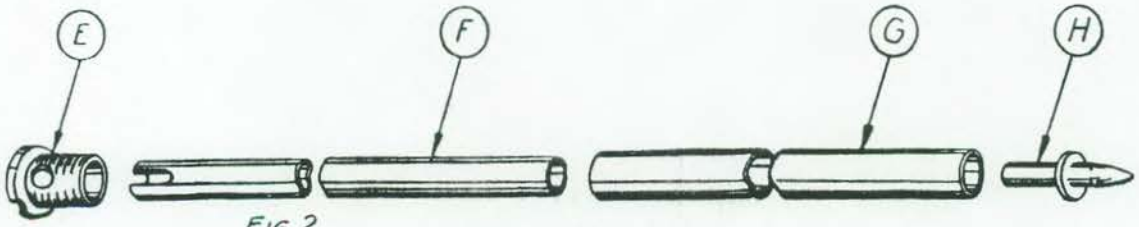


FIG 2

REPAIR STEAM TUBE

40 BOTH ENDS (E) AND (H), FIGURE 2, OF STEAM TUBE ARE SOLDERED IN PLACE AND CAN BE REMOVED BY HEATING AND PULLING OFF. SLEEVE (G) NOW SLIDES OFF TUBE (F). REPLACE PARTS IF NECESSARY, AND SLIP SLEEVE (G) OVER (F), (E) AND (H) AND SWEAT INTO POSITION SHOWN IN FIGURE 2.

SMALL ARMS GUN, MACHINE CAL. 30 BROWNING M1917A1	OVERHAUL	SHEET 25 OF 25

TOOLS REQUIRED

TOOL DWG NO.	SHEET	OPER.	DET.
908089	8	11	L
908090	9	14	Z
C3940	12	19	B
908982	12	19	C
908983	12	19	E
432858-9	13	FIG 1	X
433071	13	FIG 1	E
421660	14	23	C
433073	14	23	X
421661	15	25	D
432236	16	26	A
908984	17	28	A
B46219	17	28	C
908985	17	28	B
908245	19	30	B

TOOL DWG NO	SHEET	OPER.	DET.
432070	19	31	E
908243	20	32	C
421664	20	33	E
433072	21	34	A
433074	22	35	A
D16176	22	36	B
908249	23	37	A
908248	23	37	B
B58334	23	38	D
905396	23	38	F
908987	23	38	G
905469	23	38	H
908986	23	38	K
908988	23	38	X

ORDNANCE FIELD SERVICE

BASE SHOP DATA

GUN, MACHINE, CAL. .30

BROWNING, M1917A1

PREPARED UNDER THE DIRECTION OF THE
CHIEF OF ORDNANCE

ROCK ISLAND ARSENAL - FEB., 1943

B.S.D. No.

Assembly 3

SMALL ARMS GUN, MACHINE CAL. 30 BROWNING M1917A1	ASSEMBLY	SHEET 1 OF 5

ASSEMBLE WATER JACKET

(1) SCREW EYEBOLT (H) AND PLUG (G) IN PLACE AS SHOWN. ALSO ASSEMBLE EYEBOLT (F) AND CORK (D). MUZZLE GLAND (C) CAN NOW BE SCREWED IN TIGHT. FRONT SIGHT LEAF (K) CAN BE DRIVEN INTO SLOT IN BASE AND HELD IN PLACE WITH SCREW (L). NOW SCREW STEAM TUBE (B) INTO JACKET.

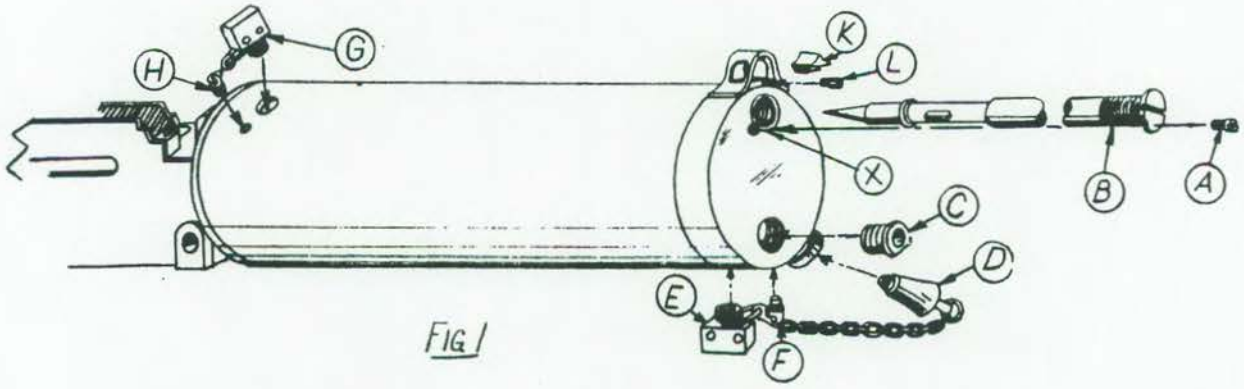


FIG 1

(IF CUTAWAY IN HEAD OF TUBE FAILS TO LINE UP WITH THE HOLE FOR LOCKSCREW (A), REMOVE TUBE AND FACE OFF THE SURFACE OF STEAM TUBE HOLE (X) UNTIL (B) SCREWS UP TIGHTLY IN PROPER POSITION. NOW PUT IN LOCK SCREW (A))

SMALL ARMS GUN, MACHINE CAL. 30 BROWNING M1917A1	ASSEMBLY.	SHEET 2 OF 5

ASSEMBLE CASING

(2) PLACE SPRING (A) IN HOLE IN TOP OF BELT HOLDING PAWL BRACKET. PUT PAWL (B) IN PLACE AND INSERT PIN (C). NOW PLACE BREECHBLOCK CAM (E) INSIDE OF CASING (D) AS SHOWN IN FIG. 1. PUT IN LOCK SCREW (F) AND DRAW UP TIGHT. NOW BACK OFF LOCK SCREW (F) FROM 1/16 TO 1/4 TURN AND STAKE IN PLACE.

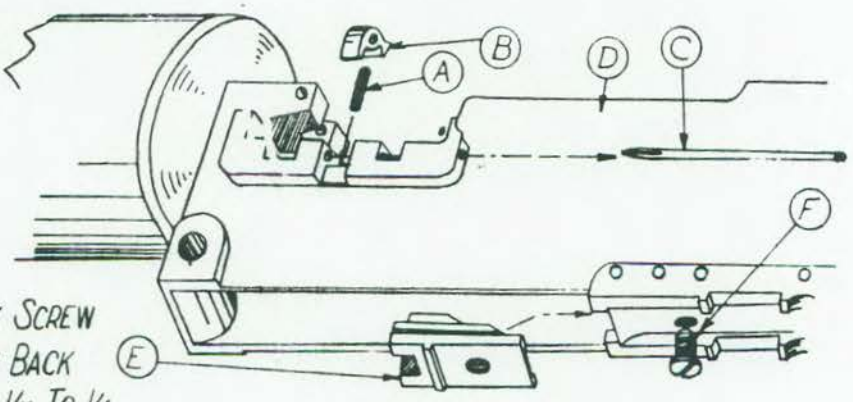


FIG. 1

(3) PLACE COVER (G), FIG. 2, IN PLACE ON CASING (H) AS SHOWN. PLACE SPRING (M), MOVABLE PLATE (N) AND FIXED PLATE (P) ON SCREW (K) IN POSITIONS SHOWN IN FIG. 2. NOW INSERT (K) THROUGH CASING AND COVER. SCREW ON NUT (L) AND TIGHTEN.

NOTE: DO NOT TIGHTEN (L) SO TIGHT THAT SPRING (M) IS FULLY COMPRESSED. INSERT COTTER PIN (R) AND CHECK TO SEE THAT COVER WORKS FREELY.

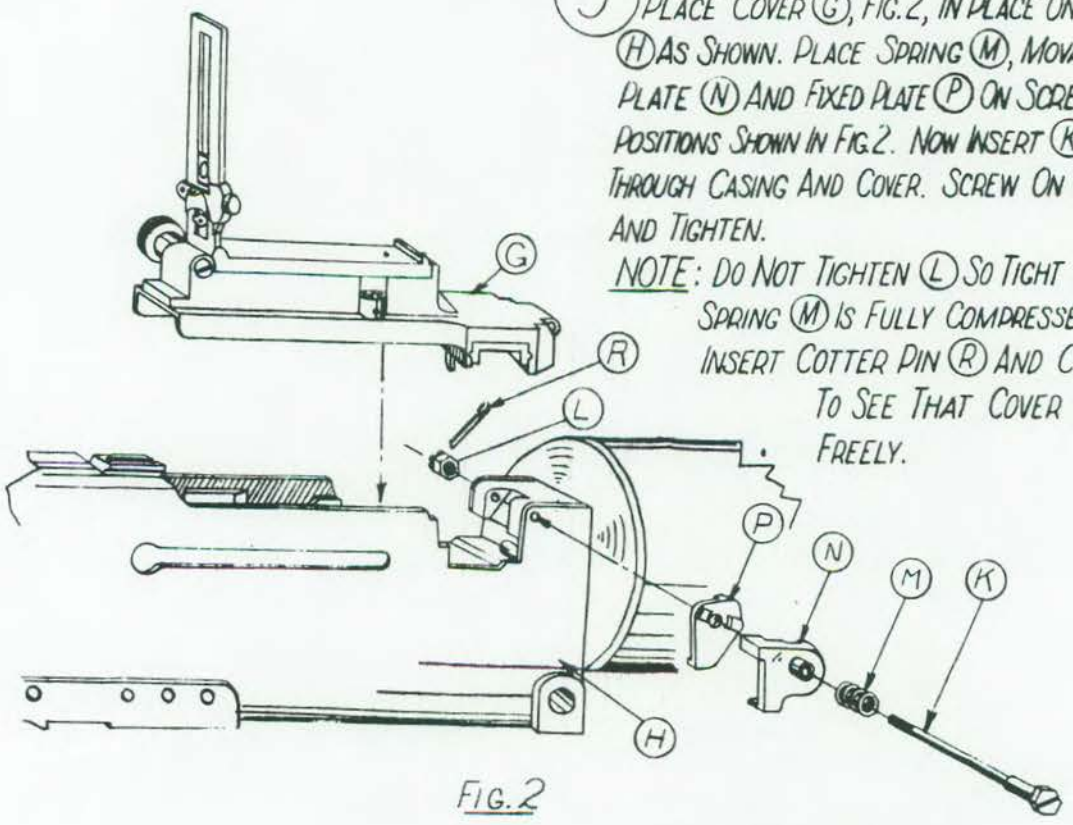


FIG. 2

SMALL ARMS · GUN, MACHINE CAL. 30 BROWNING M1917A1	ASSEMBLY	SHEET 3 OF 5

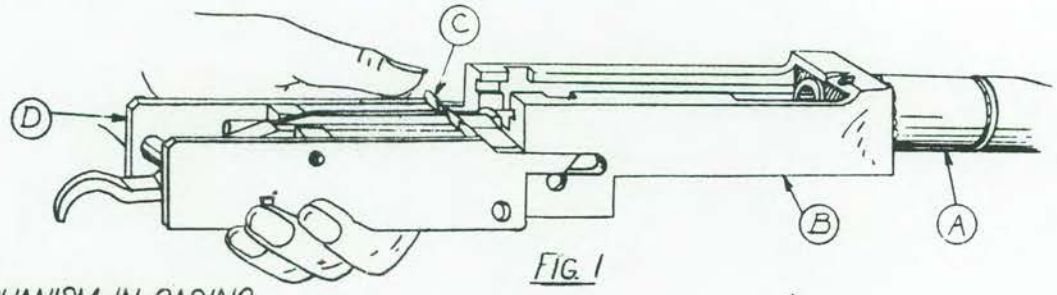


FIG. 1

REPLACE MECHANISM IN CASING

(4) SCREW BARREL (A) ONTO BARREL EXTENSION (B). BE SURE SPRING IS ENGAGING IN NOTCHES OF BARREL. DRAW BARREL UP TIGHT AND BACK OFF ABOUT THREE NOTCHES. NOW FASTEN LOCK FRAME (D) TO EXTENSION (B) AS FOLLOWS: PLACE FORKED END OF (D) INTO SLOTS ON SIDE OF (B). PULL ACCELERATOR (C) UP SO THE TWO FINGERS STRADDLE THE END OF BAR (B). NOW PUSH FORWARD ON (D) WHILE HOLDING (B) SECURE. THE TWO WILL LOCK TOGETHER.

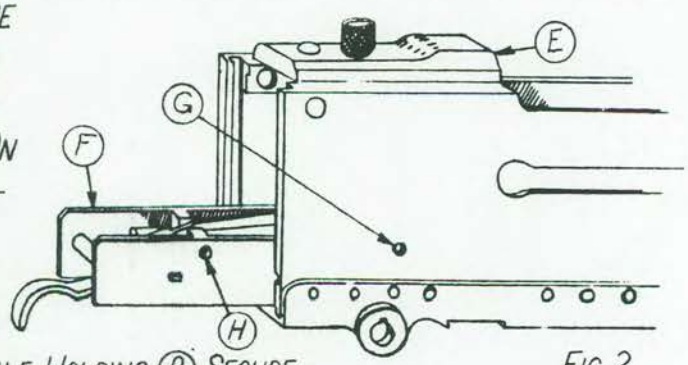


FIG. 2

NOW PUSH ASSEMBLY (F) INTO CASING UNTIL PIN (H) LOCKS IN HOLE (G). SLIDE (E) IN PLACE.

(5) SLIDE BOLT (K) INTO CASING (L) AS SHOWN IN FIG. 3. PUT HANDLE (M) THROUGH HOLE IN CASING AND INTO HOLE (N) IN BOLT. SLIDE HANDLE FORWARD.

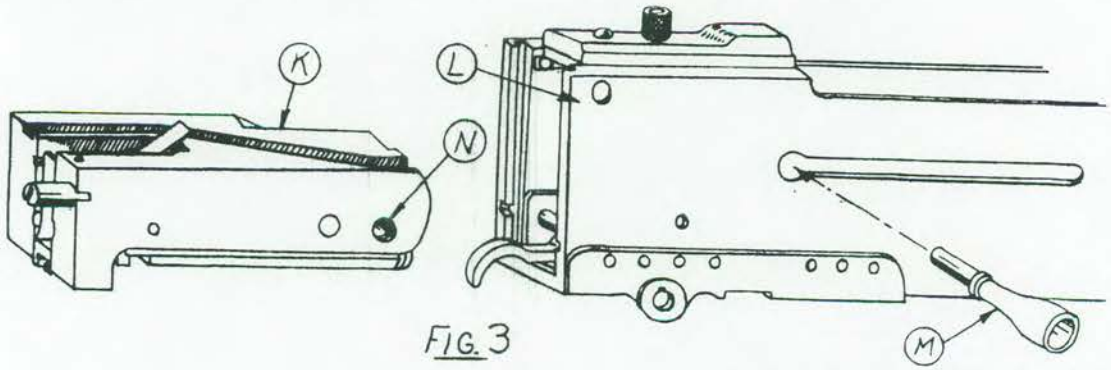


FIG. 3

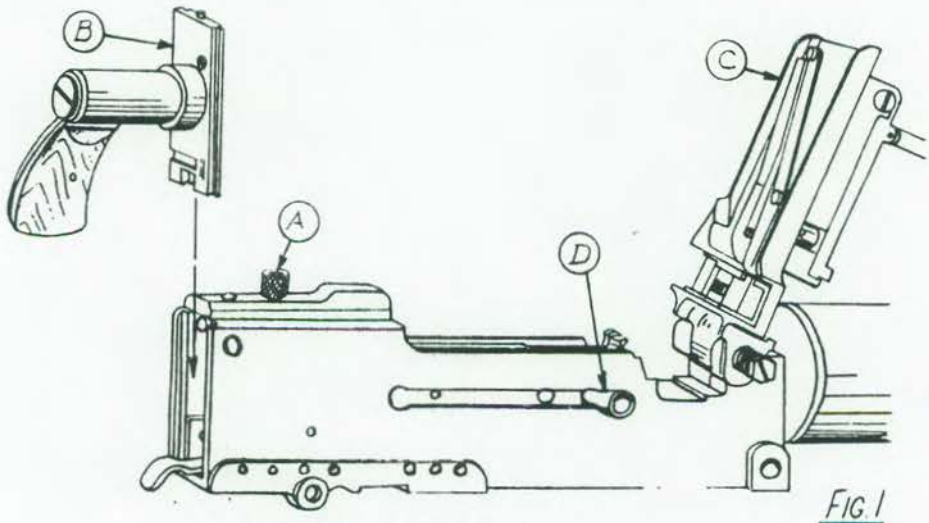


FIG. 1

ASSEMBLE BACK PLATE

(6) PUSH FORWARD ON COVER LATCH (A) AND SLIDE BACK PLATE (B) INTO GROOVES IN BREECH END OF CASING. RELEASE COVER LATCH (A) AND CLOSE COVER (C). PULL BACK ON HANDLE (D) AS FAR AS IT WILL GO AND HOLD IN PLACE WITH LEFT HAND. USE A SCREWDRIVER IN RIGHT HAND AND TURN ROD (F) 1/4 TURN TO THE LEFT. RELEASE BOLT HANDLE. LOWER SIGHT LEAF (E) AND CHECK GUN FOR PROPER FUNCTIONING OF PARTS.

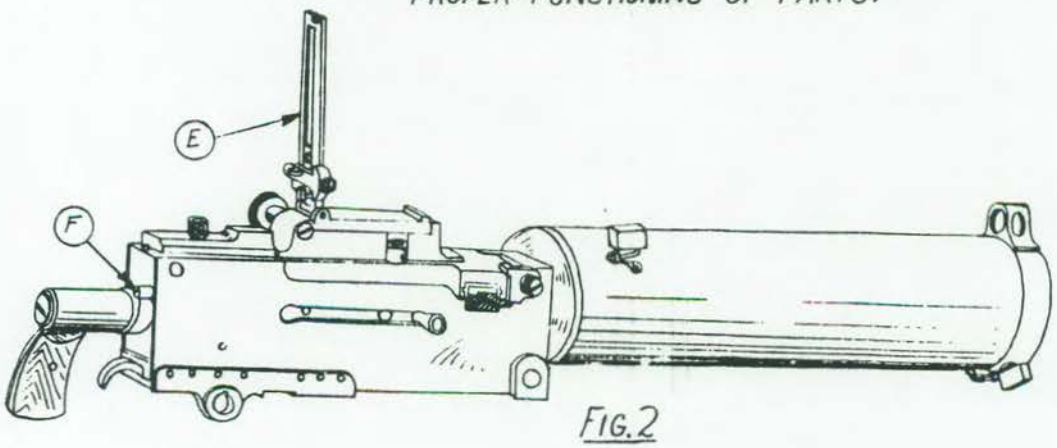


FIG. 2

SMALL ARMS GUN, MACHINE CAL. 30 BROWNING M1917A1	ASSEMBLY	SHEET 5 OF 5

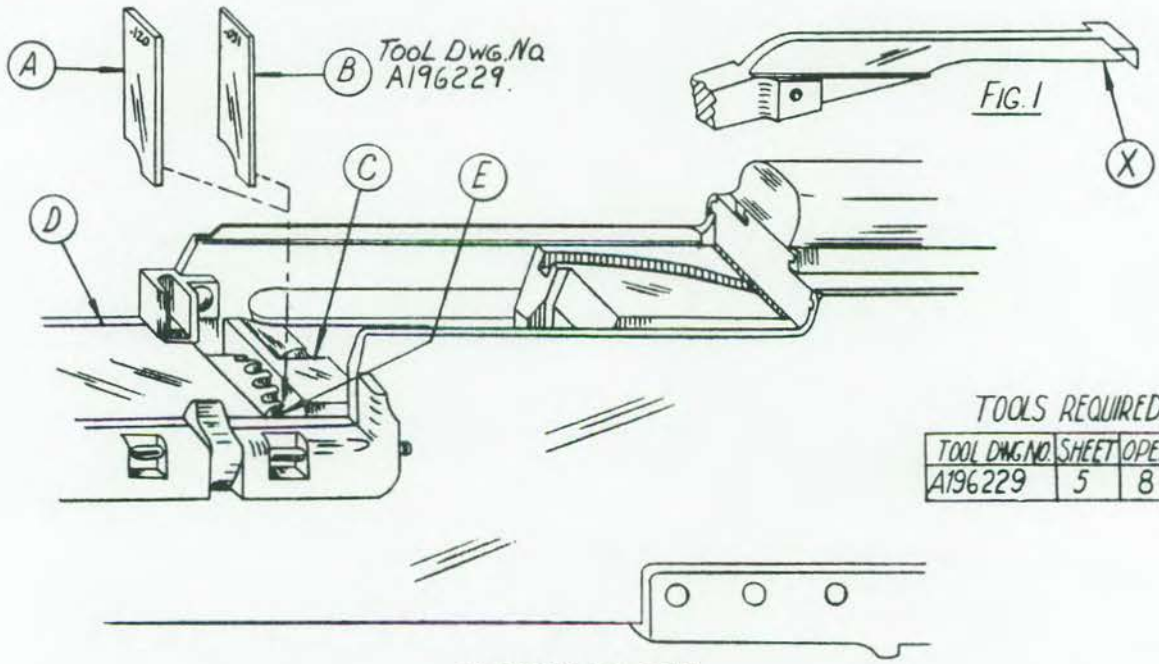


FIG. 1

TOOLS REQUIRED

TOOL DWG. NO.	SHEET	OPER.	DET.
A196229	5	8	B

HEADSPACE GUN

(7) PULL BOLT BACK AND HOLD IN BACK POSITION. PUT A SCREWDRIVER IN NOTCH (E) OF BARREL AND TIGHTEN BARREL TO THE LAST FULL NOTCH. NOW BACK BARREL OFF TWO NOTCHES AND ALLOW BOLT TO GO FORWARD. IF EXTENSION (C) CLOSES COMPLETELY, THE BARREL IS REJECTED. IF EXTENSION HOLDS OPEN, CONTINUE TO BACK OFF NOTCHES ONE AT A TIME UNTIL EXTENSION CLOSES COMPLETELY. NOW BACK OFF TWO EXTRA NOTCHES AND GUN IS HEADSPACED FOR FIRING.

TIME GUN

(8) PULL BACK ON BOLT AND PUT GAGE (B) BETWEEN BARREL EXTENSION (C) AND TRUNNION BLOCK (D). ALLOW BOLT TO GO FORWARD. IF GUN NOW FAILS, THE END OF TRIGGER (X), FIG. 1, SHOULD BE BENT DOWN SLIGHTLY AND TRIED AGAIN. WHEN TRIGGER HAS BEEN BENT ENOUGH TO FIRE ON GAGE (B), GAGE IS REMOVED AND GAGE (A) INSERTED. SHOULD IT FIRE WITH GAGE (A), END OF TRIGGER IS BENT UP SLIGHTLY. ADJUST TRIGGER UNTIL GUN FIRES ON GAGE (B) AND NOT AT GAGE (A). CHECK TRIGGER PULL.

(9) TRIGGER PULL MUST BE BETWEEN 7 AND 12 LBS. THE PULL MAY BE ADJUSTED BY BENDING THE SEAR SPRING.

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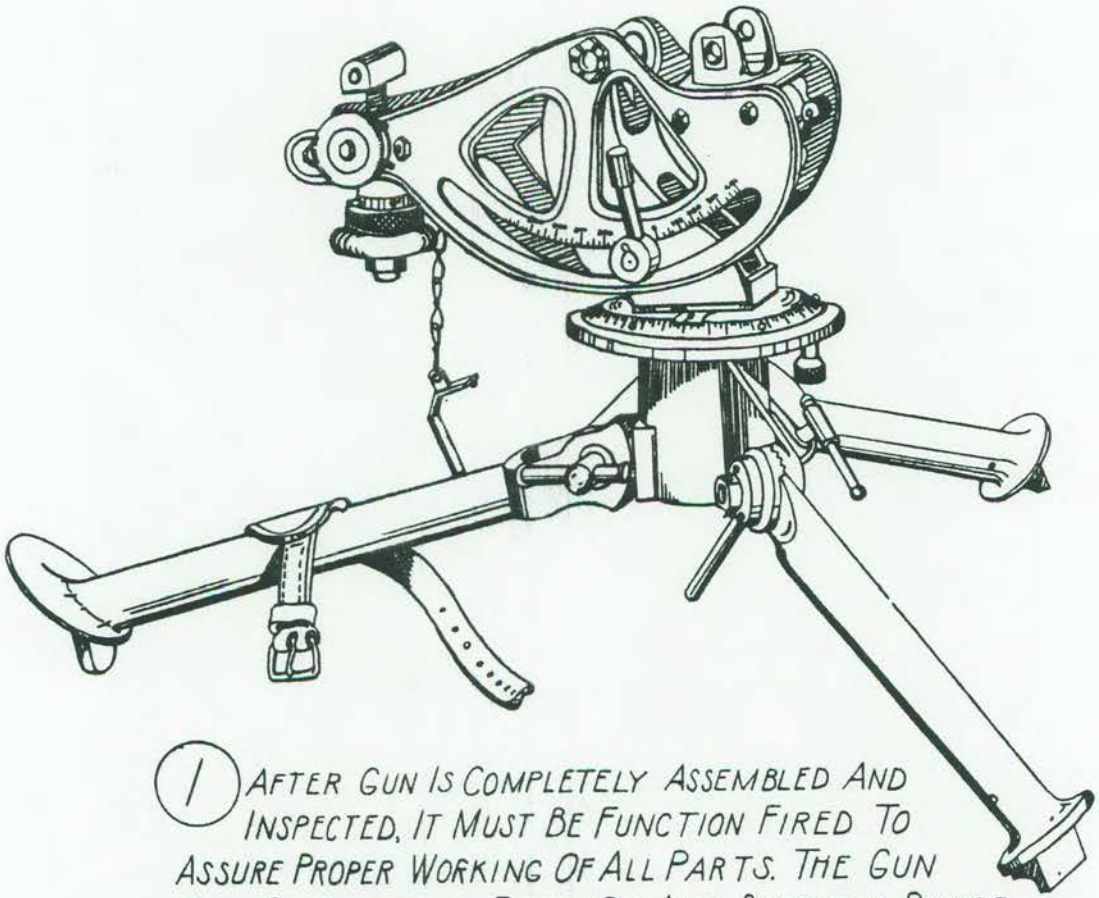
ROCK ISLAND ARSENAL - FEB., 1943

B.S.D. No.

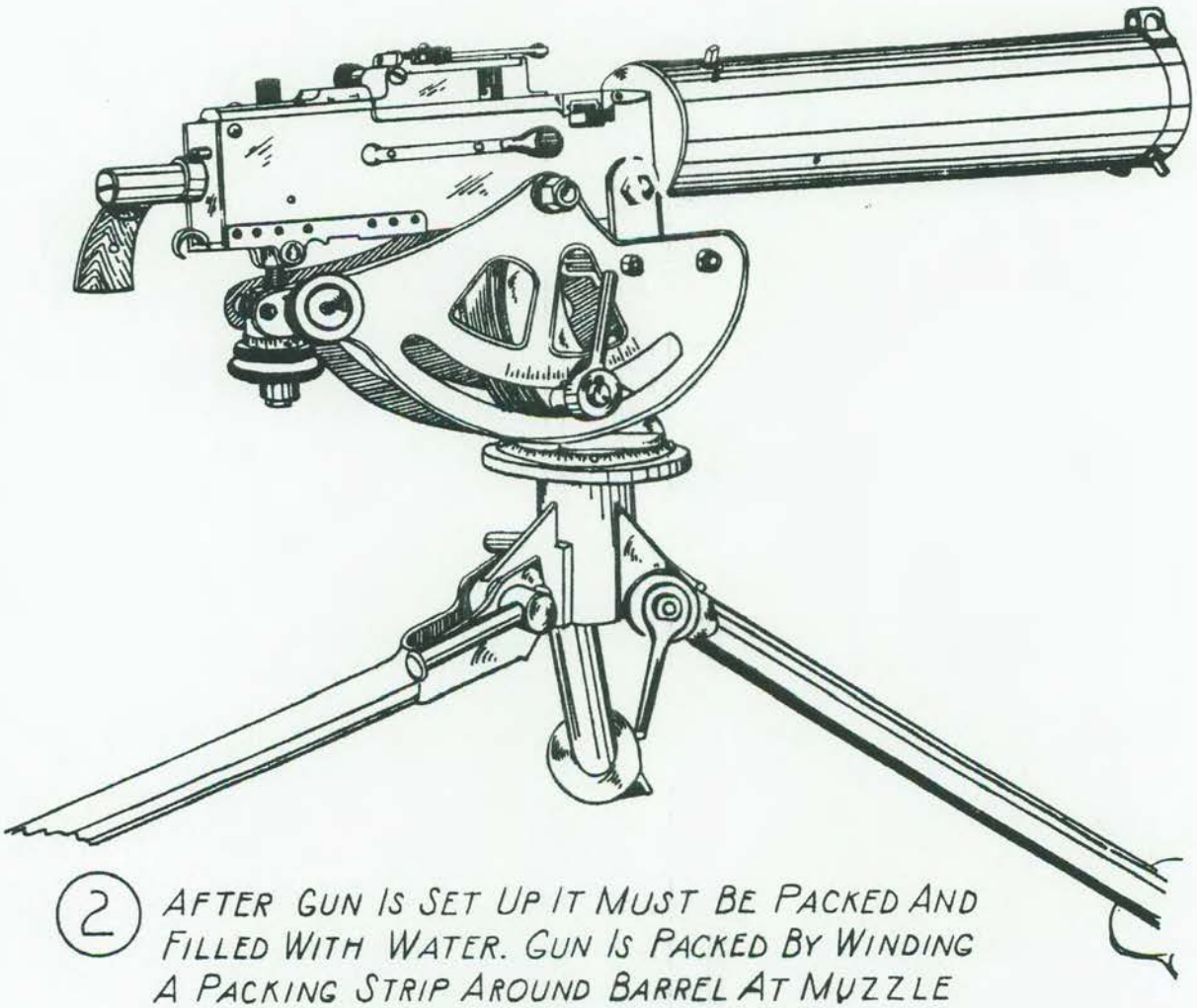
Function Firing 4

ARTILLERY GUN, MACHINE CAL. 30 BROWNING M1917A1	FUNCTION FIRING	SHEET 1 OF 2



(1) AFTER GUN IS COMPLETELY ASSEMBLED AND INSPECTED, IT MUST BE FUNCTION FIRED TO ASSURE PROPER WORKING OF ALL PARTS. THE GUN CAN BE FUNCTION FIRED ON ANY SUITABLE RANGE. PROBABLY THE EASIEST METHOD OF FIRING THE GUN WILL BE TO MOUNT IT ON THE REGULAR TRIPOD MOUNT AS SHOWN ABOVE.

ARTILLERY GUN, MACHINE CAL .30 BROWNING M1917A1	FUNCTION FIRING	SHEET 2 OF 2



(2) AFTER GUN IS SET UP IT MUST BE PACKED AND FILLED WITH WATER. GUN IS PACKED BY WINDING A PACKING STRIP AROUND BARREL AT MUZZLE AND BETWEEN THE CAP AND MUZZLE GLAND. THE REAR PACKING IS PLACED IN A GROOVE IN BARREL. GUN SHOULD BE FIRED FOR 15 TO 25 ROUNDS TO CHECK PROPER FUNCTIONING.

NOTE: FUNCTION FIRE THIS GUN IN ACCORDANCE WITH U.S. ARMY SPECIFICATIONS S2-6-1.